

FLIGHT

First Aero Weekly in the World.

Founder and Editor : STANLEY SPOONER.

A Journal devoted to the Interests, Practice and Progress of Aerial Locomotion and Transport.

OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM.

No. 408. (No. 42, Vol. VIII.)

OCTOBER 19, 1916.

[Weekly, Price 1d.
Post Free, 1½d.]

Flight.

Editorial Office: 44, ST. MARTIN'S LANE, LONDON, W.C.
Telegrams: Truditor, Westrand, London. Telephone: Gerrard 1828.
Annual Subscription Rates, Post Free.

United Kingdom .. 6s. 6d. Abroad .. 11s. 6d.

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TO OUR READERS.

The Supply of "FLIGHT." Important Notice.

Order "FLIGHT" to be either delivered or reserved for you regularly.

As the demand for "FLIGHT" is so great each week, it is of the utmost importance that readers should place their orders *firmly* for copies of "FLIGHT" at the bookstalls, their newsagents, or direct from the publishers, at 44, St. Martin's Lane, W.C., if they wish to secure a copy every week and avoid disappointment. The stringent Government restrictions in regard to the supply of printing paper necessitates this precaution in order that only actual numbers required are printed, and all wastage by unsold copies may thereby be reduced to a minimum, if not eliminated.

THE PUBLISHERS.

EDITORIAL COMMENT.



IN a speech delivered at the annual meeting of the Liberal Federation of Ontario last week, Sir Wilfred Laurier uttered a deprecatory warning which we in this country will do well to ponder and take to heart. After contrasting the methods of Germany with those of the British Empire, and expressing his deep conviction that the policy of Britain in the past should be the policy of the future, Sir Wilfred went on to say:—

"Yet while our men are fighting at the front there

are amongst us men consuming the mid-night oil and spending a lot on printer's ink in reconstituting the British Empire, not upon the old lines of British freedom, but upon the lines of German militarism. It would be a sad day if, when we are engaged in a war the object of which is to save civilisation from militarism, the result was to saddle the victorious nations "with militarism."

Sir Wilfred apparently intended his remarks to apply to the question of militarism pure and simple, as it affects defence and aggression, but it would have been possible to have gone a great deal farther in his deprecation of the disquieting tendency which is increasingly observable to incorporate more and more of the spirit of Prussianism into the life and affairs of Britain. Admitting that the organisation of Germany for war and commerce is a wonderful structure, it does not follow that the mere aping of the worst features of its methods is the only, or even the best, solution of the problems we shall have to face after the war.

So far as concerns the future of military service, it is not within the province of this journal to discuss it in detail, even were the times appropriate. But there are larger aspects of the Prussianising tendency which do concern us and every thinking citizen. On every hand we see the malign influence of the professional politician making itself felt in the manifest endeavour to restrict the liberties of the subject and to ensure the permanency of government by a bureaucracy. We use this last expression advisedly, since it cannot have escaped the most casual observer that that is the form of government which directs the affairs of the nation for the present. Nor, provided the politicians were, in sporting parlance, prepared to play the game, should we have any quarrel about it.

Such an emergency as that with which we are faced cannot be dealt with by the ordinary machinery of democratic government—a wise and benevolent autocracy is necessary for the moment. But it must possess those two qualities to approach the ideal, and it is precisely those qualities that are lacking. Instead, we find existing a questionable atmosphere of intrigue and chicanery, and an ample evidence of political wirepulling which gives rise to grave misgivings regarding the conditions that are likely to obtain in the days of "after the war."

Without any manner of doubt, the politicians are insidiously laying their plans for a complete Prussianisation of the country. On every hand the signs are there to be read as we run. Our every movement is subject to control of one sort or another. Every jack-in-office considers that he has full licence to impose his own edicts on the individual, as witness the example of the coroner "somewhere in the Midlands," who, in the conduct of an air-raid inquest, told the foreman of the jury, who had ventured the remark that there was blame somewhere for things not being done, that: "I cannot allow you to express your private opinion!" Ye gods! Things have come to a pretty pass indeed when a petty official talks of "not allowing" a free expression of opinion upon matters of public interest.

But we have only quoted this minor example as an evidence of the general trend of things. By itself it would simply be a rather humorous incident, illustrating the swollen-headedness of an individual. Unfortunately, it goes deeper, in that it is eloquent of the condition into which the country is being led by the bureaucrats. Everywhere we see the signs of Prussianisation, often under the specious guise of a socialistic-cum-war-emergency necessity designed to gull the public into a sense of complaisant security. Everything is to be nationalised, so that we may be certain of winning the war! That appears to be one of the latest shibboleths of the politicians. By all means let the State take over all and every Imperial resource if that be necessary to the winning of the war. We are all of us agreed upon that, and we are all of us willing to suffer the maximum of inconvenience to that end. We are, so we are told—and we do not mean it to be inferred that we do not believe in the sentiment—fighting this war in defence of liberty and all that liberty stands for. If the ultimate result of the struggle is to be for us a bureaucratic despotism worse than anything that Germany has been able to show us, then our sacrifices will have been vain.

We have Royal Commissions and Committees sitting to report on every conceivable thing under the sun, and, generally speaking, their recommendations all trend in the one direction—that of more direct control by the State. Commerce of the future is to be directed by the State. Meat and bacon are to be State monopolies. Shipping is to be under State control. Municipalities are to be compelled to go into shop-keeping—in a word, the whole life of the community is to be socialised. By inference this is to happen *for the period of the war only*. But does any sane person imagine that we are to be allowed to go back to the state of comparative liberty enjoyed before the war? The idea gives us to laugh, as our

Allies across the Channel have it. In the first place, you cannot trust in the smallest degree the pledges of the politicians. Whether it is a case of cajoling the votes of the public or of getting a controversial measure through Parliament, pledges wholesale are never wanting—and they have the value of the mere words uttered for the moment and nothing farther. No need to quote examples, or if one were needed, there is the scandal of the excess war profits enactment, in principle a measure of soundness, but as passed, having regard to the pledges, utterly ignored, of Ministers during debate, nothing less to thousands of British subjects than a legalised barefaced act of confiscation and robbery.

In fact, the whole history of government by lawyer partisans is one of broken and forgotten pledges, amounting in many cases to fraudulent and misleading statements of the worst kind.

Therefore, whatever the pledges given that this measure of restriction or that shall only be temporary in its incidence, we have always to keep in mind that we cannot regard these pledges as having one iota of honourable intention in them. Farther than that—and possibly even more serious in its lasting effects—is the fact that every such measure means the creation of yet another small—or big—army of officials to administer it. All these officials draw Government pay for their services, and it is not to be supposed that at the end of the war these people are going to submit without a struggle to the discontinuance of the various Acts of Parliament that have created their jobs. The answer to that may be that public opinion will ensure the removal of objectionable restrictions. Will it? Bear in mind that at the rate we are going on now, the preponderance of public opinion after the war will be official opinion, and we are not going to get that opinion on the side of abolishing anything in the way of official jobs. We are in a fair way of becoming a nation of officials, and unless something can be done in time the post-war position will be as we have said. We are honestly convinced as a result of a study of the signs of the times that there is a deep lying movement in progress to officialise—to put it in the very mildest term possible—the whole life and business of the nation, and unless the progress of that movement is arrested in time, our last case will be worse than the first. As we have so often said in the past, the art of politics is simply putrid. We had hoped that the war would have brought about a change for the better, but by the trend of events it would seem as if things may be worse than ever.

**Bring Them
into the
Open!**

A Bill has passed through the House of Lords, embodying the principle of registration of the names of all persons and firms carrying on trade in this country under names other than their own. Its passing through the Commons has been delayed, and according to Mr. H. J. Glanville, M.P., "It may be hung up indefinitely unless there is pressure by the commercial world." Why? To the honest trader no more useful measure could be imagined.

In support of the Bill it is urged that a very large number of cases has been disclosed of enemy aliens



AN EVENING SCENE AT HENDON.—E. Baumann on a Ruffy-Baumann with a passenger.

trading either in the names of British firms or under the titles of British companies. Even apart from the shelter afforded by the present system in the direction indicated, what is the objection to the proposed measure, and why should it be hung up indefinitely? There seems no reason in the world to be advanced against such a scheme of registration as that in effect in Australia, for example. When it comes to measures directed against the liberties of the mere Briton, Parliament is capable of rushing through an Act, from first reading to Royal assent, in a couple of days—we almost said hours, but procedure steps in there. When, however, the proposed measure is one for the protection of the national interest, interminable delays occur. No wonder there is a profound belief in the "Hidden Hand." There is far too much of this tenderness toward the Hun in official quarters, and the people responsible have only themselves to thank if they are suspect of leanings toward the common enemy.

Honour for the Dead.

We like the suggestion of a correspondent of the *Morning Post*, that a token of recognition of the supreme sacrifice should be given by the nation to the relatives of those who have laid down their lives in the country's cause during the Great War. We are, on general principles, against the multiplication of badges and medals, but in this case we are all for something of the kind being done. The French Government, with ready and sympathetic appreciation, has already promulgated a law which decrees that a "Diploma of Honour," bearing the inscription: "Aux morts de la grande guerre, la patrie reconnaissant," shall be sent to the families of soldiers who have died for their country. We agree with the

correspondent of our contemporary in the view that some such token would bring its meed of consolation and of heartening pride to many a stricken home, and would be cherished as an heirloom in the families of those who have given of their best for their country. We sincerely hope that the idea will not be lost sight of, and that measures will be taken at once to give it proper effect.

The Light of a Match.

In a Midland town the other day a number of persons were fined for striking matches in the streets on the night of an air-raid. The offence may appear to be a trivial one on the face of it, but it is really not so. In a previous issue of "FLIGHT" we gave the detailed results of visibility tests with certain kinds of lights, and noted at the time the apparently almost incredible fact that, on a dark night, the light of an ordinary match was easily visible at a distance of a mile. Hostile aircraft do not, as a rule, fly at as low an altitude as a mile, and on the basis of the tests noted above, the striking of a single match would be neither here nor there. According, however, to the evidence of a police superintendent, although the street lamps were all extinguished during the raid, there was almost as much light as though they had been lit, owing to people striking matches to light pipes and cigarettes! As an evidence of the *sang froid* with which the Midlanders regard the coming of the Zepps., the policeman's statement is admirable reading. It reflects very badly, however, on their common-sense. One match, as we have said, may be harmless, while a number may be deadly. Therefore, the moral is that during a raid people whose curiosity brings them out of doors must forego their smokes.

THE ROLL OF HONOUR.

Reported by the Admiralty:—

Slightly Wounded.

Prob. Flight Sub-Lieut. J. S. Wright, R.N.

Prisoner of War.

Flight Sub-Lieut. B. A. Millard, R.N.

Reported by the War Office:—

Previously reported Missing, now reported Killed.

Lieut. N. A. Browning-Paterson, R.F.A. and R.F.C.

Lieut. J. C. Turner, R.F.C.

Capt. G. W. Webb, R. Irish Rifles and R.F.C.

Died of Wounds.

2nd Lieut. P. R. Pinsent, R.F.C.

5569 Corpl. D. B. Walker, R.F.C.

Previously reported Wounded, now reported

Died of Wounds.

Capt. K. A. Brooke-Murray, A.S.C., attd. R.F.C.

Previously reported Wounded and a Prisoner of War, now reported Died of Wounds as a Prisoner of War in German hands.

Lieut. J. R. Dennistoun, Cav. Spec. Res. and R.F.C.

Previously reported Missing, now reported Died of Wounds as Prisoner of War in German hands.

2nd Lieut. R. M. Wilson-Browne, R.F.C.

Died.

2nd Lieut. J. S. Mitchell, R.F.C.

34188 2nd Air-Mech. J. W. Garratt, R.F.C.

Killed.

3192 Corpl. A. Winterbottom, R.F.C.

Wounded.

Lieut. W. F. Anderson, Canadian Gen. List, attd. R.F.C.

2nd Lieut. C. J. Cleaver, R.F.C.

2nd Lieut. D. D. Fowler, R.F.C.

2nd Lieut. S. A. Gibbons, R.F.C.

2nd Lieut. R. St. J. Hartley, Devon, attd. R.F.C.

Lieut. C. C. Miller, Duke of Wellington, and R.F.C.

2nd Lieut. A. Rice-Oxley, Shropshire L.I. and R.F.C.

2376 Corpl. N. D. Bryce, R.F.C.

3436 Corpl. G. Munk, R.F.C.

1270 1st Air-Mech. J. C. Nicholls, R.F.C.

19845 2nd Air-Mech. F. Tilyard, R.F.C.

Missing.

2nd Lieut. W. R. C. Carmichael, Highland L.I., attd. R.F.C.

2nd Lieut. W. C. Fenwick, R.F.C.

2nd Lieut. C. Kennard, R.F.C.

2nd Lieut. W. D. Miller, R.G.A. and R.F.C.

17018 Sergt. H. Bellerby, R.F.C.

6537 1st Air-Mech. L. O. Law, R.F.C.

Previously reported Missing, now reported Wounded and Prisoners of War in German hands.

2nd Lieut. R. T. Griffin, R.F.C.

2nd Lieut. A. J. O'Byrne, King's (L'pool), attd. R.F.C.

Previously reported Missing, now reported Prisoners of War in German hands.

2nd Lieut. S. P. Briggs, Northants. and R.F.C.

Capt. E. W. Leggatt, Wiltshire, attd. R.F.C.

2nd Lieut. A. W. Reynell, R.F.C.

2nd Lieut. K. K. Turner, R.F.C.

The British Air Service

"PER ARDUA AD ASTRA"

Under this heading are published each week the official announcements of appointments and promotions affecting the Royal Naval Air Service and the Royal Flying Corps (Military Wing) and Central Flying School. These notices are not duplicated. By way of instance, when an appointment to the Royal Naval Air Service is announced by the Admiralty it is published forthwith, but subsequently, when it appears in the LONDON GAZETTE, it is not repeated in this column.

Royal Naval Air Service.

Admiralty, October 10th.

Temp. Sub-Lieut. S. A. S. Cheshire, promoted to Lieut. (temp.), seniority, May 15th; H. French, R.N.V.R., promoted to Temp. Lieut., R.N.V.R., seniority Oct. 5th.

Proby. Flight Sub-Lieut. (temp.) A. A. Bryce-Buchanan, granted temp. Commission as Sub-Lieut., R.N.V.R., seniority Oct. 9th.

Air Mech., 2nd Grade, N. McCrerrick granted temp. commission as Sub-Lieut., R.N.V.R., seniority Oct. 15th.

C. C. Purdy and C. C. Goodhue entered as Proby. Flight Sub-Lieuts. for temp. service, to date Aug. 23rd and Sept. 13th respectively.

A. E. Kitsell entered as Warrant Officer, 2nd grade, for temp. service, to date Oct. 9th.

Chief Petty Officers (1st Class) J. W. Jean, W. Cole, V. H. Lurie, F. Polley, and M. F. Morris promoted to Warrant Officers, 2nd grade, all to date Oct. 1st.

Chief Petty Officers (2nd Class) E. A. Blundell, J. S. Middleton, F. W. Todd. Chief Petty Officers (3rd Class) B. H. England, W. J. Standish, W. J. Harris, and Petty Officer J. C. Nerney promoted to Warrant Officers, 2nd grade, for temp. service, all seniority Oct. 1st.

Admiralty, October 11th.

C. E. Fox, entered as Proby. Flight Officer, temp., and appointed to the "President," for R.N.A.S., date Oct. 15th.

Admiralty, October 12th.

Lieut.-Com (R.N.) K. G. Brooke, appointed Acting Com., date Oct. 9th.

H. D. Grant and F. L. Morrison granted temp. commissions as Sub-Lieut., R.N.V.R., seniority Oct. 11th and Oct. 10th respectively.

L. E. M. Gillman entered as Proby. Flight Officer, temp. service, date Oct. 15th.

Acting Carpr. C. V. Lacey graded as Warrant Officer, 2nd grade, date May 19th, 1915.

Admiralty, October 13th.

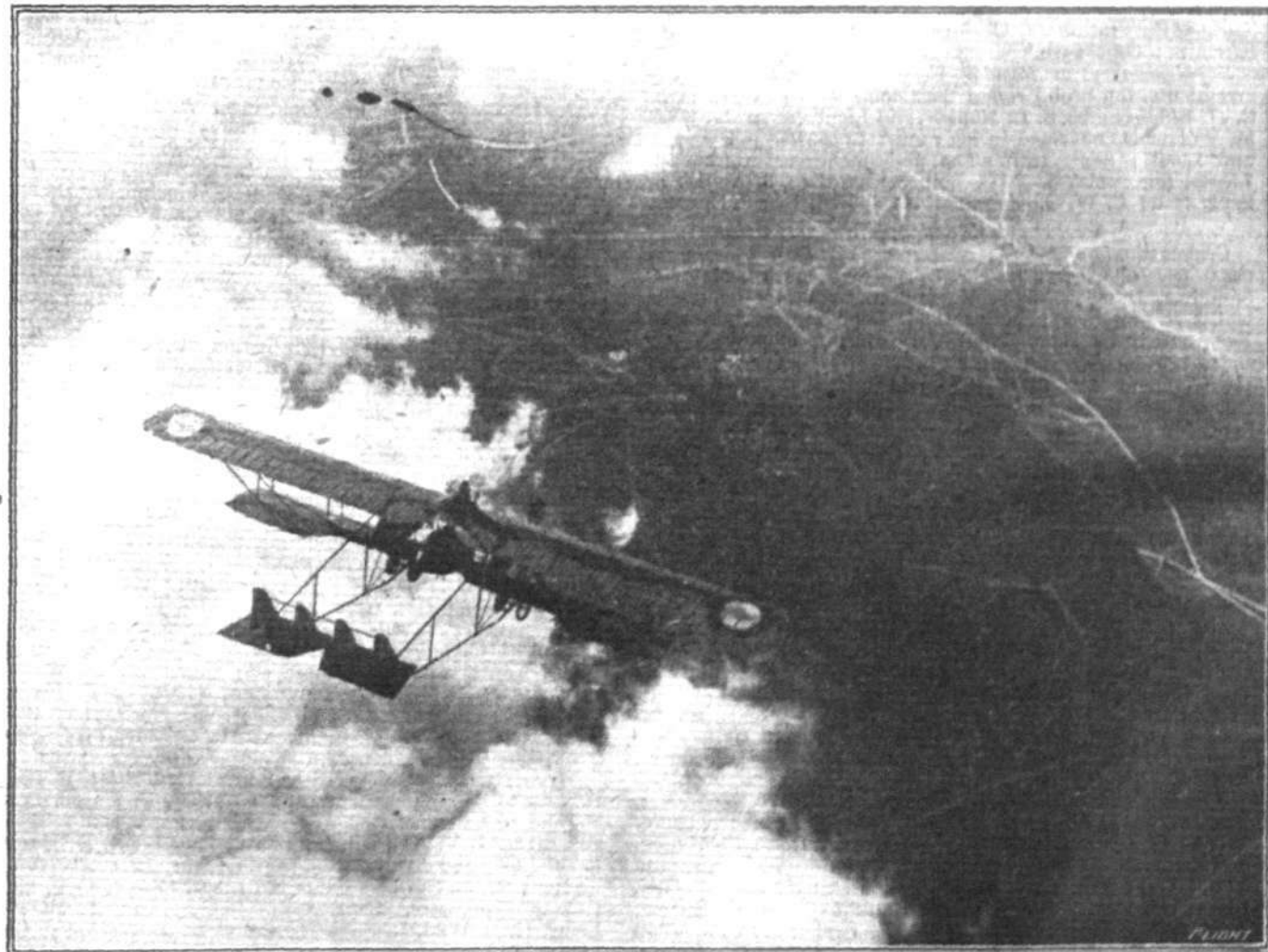
The undermentioned have been entered as Proby. Flight Officers for temp. service, all to date Oct. 15th: H. D. Driver, E. D. B. Russell, E. S. Ades, J. F. V. Sugars, F. T. P. Williams, G. H. Shaw, L. R. Knowles, A. W. Wood, I. E. Smithies, W. B. E. Powell, M. J. R. Duff-Fyle, and C. R. L. Outhwaite.

Admiralty, October 14th.

R. M. Smylie granted a temp. commission as Lieut., R.N.V.R. J. J. W. Nicholson granted a temp. commission as Sub-Lieut., R.N.V.R., and both appointed to the "President II," additional, for R.N.A.S., to date Oct. 13th.

Admiralty, October 16th.

H. L. Crowe entered at Proby. Flight Sub-Lieut. for temp. service, to date Sept. 28th. Chief Petty Officer W. Liniker promoted to Temp. Warrant Officer, 2nd grade, to date Oct. 1st.



A French aeroplane on a bombing expedition "out yonder." A snap from another aeroplane while in flight above the clouds.

Royal Flying Corps (Military Wing).

London Gazette, October 10th.

Flying Officers.—Temp. 2nd Lieut. C. J. Truran, Gen. List; June 28th. Sept. 15th: Temp. Lieut. J. E. H. Dakin, Motor Machine Gun Corps, and to be transferred to Gen. List; Temp. 2nd Lieut. T. Langwill, High. L.I., and to be transferred to Gen. List; 2nd Lieut. (on prob.) H. J. Gearing, High. L.I., Spec. Res., and to be seconded; 2nd Lieut. (on prob.) A. N. David, Spec. Res.; Temp. 2nd Lieut. (on prob.) J. V. Lyle, Gen. List. Sept. 16th: Temp. Lieut. W. F. W. Hills, R.A., and to be transferred to Gen. List; 2nd Lieut. N. Middlebrook, Rifle Brigade, Spec. Res., and to be seconded; 2nd Lieut. N. H. Read, Spec. Res.; Temp. 2nd Lieut. T. E. Duffy, Lan. Fus.; Temp. 2nd Lieut. O. F. G. Ball, R. Sussex R., and to be transferred to Gen. List; 2nd Lieut. E. E. Glorney, Spec. Res.; 2nd Lieut. G. L. Rodwell, Spec. Res. Sept. 18th: 2nd Lieut. (Temp. Capt.) I. A. J. Duff, Dorset R. (T.F.); Temp. Lieut. C. Fairbairn, Gen. List, from a Flying Officer (Ob.), with seniority from May 30th; Temp. 2nd Lieut. (on prob.) J. E. B. Thornely, Suff. R., and to be transferred to Gen. List. Sept. 19th: Lieut. (Temp. Capt.) D. M. Stewart, R. Scots (T.F.); 2nd Lieut. J. E. Lawson, S. Mid. (Warwick) R.G.A. (T.F.); 2nd Lieut. (on prob.) P. B. Pattison, Spec. Res.; 2nd Lieut. (on prob.) J. B. Ackroyd, Spec. Res. Sept. 20th: 2nd Lieut. (Temp. Lieut.) C. Butler, W. Rid. R.E. (T.F.); Temp. 2nd Lieut. J. W. Baker, E. Surr. R., and to be transferred to Gen. List; 2nd Lieut. E. G. E. Donaldson, R.F.A., Spec. Res.; 2nd Lieut. (on prob.) W. G. Helpman, 2nd Regt., King Edward's Horse, and to be seconded.

Balloon Officers.—Sept. 23rd: Lieut. F. Wilkinson, S. Staff. R. (T.F.); 2nd Lieut. (on prob.) C. H. Knight, Dorset R., Spec. Res., and to be seconded.

Memoranda.—The undermentioned to be Temp. 2nd Lieuts. (on prob.) for duty with R.F.C.: Pte. F. W. Poat, from A.S.C.; Sept. 10th. Pte. W. C. Fauli, from R.A.M.C.; Sept. 16th. 1st Class Air Mech. H. W. Armstrong, from R.N.A.S.; Sept. 25th.

Supplementary to Regular Corps.—The undermentioned 2nd Lieuts. (on prob.) resign their commissions. Oct. 11th: C. H. Biddlecombe, S. L. Hollis. 2nd Lieut. (on prob.) W. E. M. Walker is confirmed in his rank. L. B. W. Jolley to be 2nd Lieut.; Sept. 14th. The undermentioned to be 2nd Lieuts. (on prob.) J. F. C. Bell, Sept. 17th; C. A. Brown, Sept. 25th; C. W. Olliver, Sept. 28th; E. I. David, Oct. 1st.

London Gazette Supplement, October 11th.

Commandants of Schools of Instruction, Staff Officers, 1st Class (graded for pay as A.A.G.'s).—Sept. 28th: Major C. Saunders, D.S.O., Dorset, R., and to be Temp. Lieut.-Col. whilst so employed; Major I. M. Bonham-Carter, Northd. Fus., and to be Temp. Lieut.-Col. whilst so employed.

Park Commander.—Temp. Lieut. (Temp. Capt.) A. Cleghorn, 1st Highland Fd. Coy., R.E. (T.F.), from an Equipment Officer, and to be Temp. Major whilst so employed; 20th Sept.

Squadron Commander.—Capt. C. T. Maclean, R. Sc. Fus., from a Flight Commander, and to be Temp. Major whilst so employed; Sept. 1st.

Flight Commanders.—From Flying Officers: Capt. J. E. Dixon-Spain, Hamps. R.; Aug. 23rd. Lieut. E. R. Pretyma, Som. L.I., and to be Temp. Capt. whilst so employed; Sept. 27th.

Equipment Officer.—1st Class, and to be Temp. Capt. whilst so employed; Temp. 2nd Lieut. N. F. D. Buckeridge, Gen. List, from a Flying Officer; Sept. 8th.

Flying Officers.—Temp. 2nd Lieut. F. Crisp, Gen. List; Sept. 18th. 2nd Lieut. (Temp. Lieut.) G. S. Buck, Lond. R. (T.F.); Sept. 21st. Sept. 22nd: Temp. Capt. J. W. W. Nason, R. Suss. R., and to be transferred to Gen. List; Temp. 2nd Lieut. A. H. Gearing, R. Fus., and to be transferred to Gen. List.

Flying Officers (Observers).—2nd Lieut. A. V. McKiever, Sea. Highrs. and to be sec'd.; Feb. 13th. 2nd Lieut. (Temp. Lieut.) L. Walmsley, E. York R., Spec. Res.; Feb. 14th. 2nd Lieut. G. St. V. Pawson, Westmoreland and Cumberland Yeo. (T.F.); Feb. 15th. Temp. Lieut. S. H. Hewitt, Gen. List; July 14th. Lieut. F. S. Rankin, Canadian Engrs.; Sept. 18th. Sept. 22nd: Capt. A. L. Taylor, 28th Canadian Inf. Bn. Temp. 2nd Lieut. E. V. D. Mathews, D. of Corn. L.I., and to be transferred to Gen. List; Temp. 2nd Lieut. W. G. Barker, Gen. List. Sept. 23rd: Temp. 2nd Lieut. C.

Courtneidge, Som. L.I., and to be transferred to Gen. List; Temp. 2nd Lieut. (on prob.) J. S. Williams, Gen. List.

Assistant Equipment Officers.—Aug. 31st: Temp. Capt. (Qmr. and Hon. Lieut., R.A.M.C. (T.F.)) H. S. Cleghorn, R.E.; Temp. 2nd Lieut. G. K. Shepherd, Gen. List; Temp. 2nd Lieut. D. B. Cleghorn, Gen. List. 2nd Lieut. L. B. W. Jolley, Spec. Res.; Sept. 14th. Sept. 18th: 2nd Lieut. (Temp. Lieut.) E. Gayton, R.A., and to be sec'd.; 2nd Lieuts. (on prob.), Spec. Res.—P. R. Hutchinson, T. T. Cumming; 2nd Lieut. H. E. Steinberg, Spec. Res.; 2nd Lieuts. (on prob.), Spec. Res.—A. L. Challis, W. F. J. Matthews; Temp. 2nd Lieut. G. M. J. Denman, Gen. List; 2nd Lieuts. (on prob.), Spec. Res.—A. E. Biggs, H. I. Allen, E. M. Leete, A. D. Robertson.

Memoranda.—The undermentioned Warrant and N.C.Os., from R.F.C., to be 2nd Lieuts. for duty with R.F.C.: Sergt.-Major H. C. Williamson; June 22nd. Acting Sergt.-Major Petch, Flight Sergt. W. Millett; June 23rd. Sergt.-Major L. Ankers, Acting Sergt.-Major W. H. Clover; July 1st. Sergt.-Major J. E. Street, Acting Sergt.-Major J. H. Winch, Acting Sergt.-Major H. Jones; July 10th. Flight Sergt. F. Pratt; Oct. 1st. Sergt.-Major J. Rigby, Sergt.-Major O. W. Latimer, Acting Sergt.-Major W. Sharp, Acting Sergt.-Major W. G. Stafford, Acting Sergt.-Major C. L. Archbold, Acting Sergt.-Major W. C. Clark, Acting Sergt.-Major J. Rylands, Flight Sergt. F. R. Wilkins, Flight Sergt. A. Hawley, Sergt. D. A. R. Chapman, 1st Class Air Mechanic E. G. Webber; Oct. 12th. The undermentioned N.C.Os., from R.F.C., to be Temp. 2nd Lieuts. (on prob.) for duty with R.F.C.: Flight Sergt. E. F. Hall; Aug. 28th. Flight Sergts.—E. Drudge, E. M. Cashmore, A. F. Lang; Sergts.—F. Grattan, R. G. Fussell; 1st Class Air Mechanics—E. R. Danks, J. O. Cooper; 2nd Class Air Mechanic—C. Rayner; Oct. 12th. The undermentioned to be Temp. 2nd Lieuts. (on prob.) for duty with R.F.C.: Corpl. V. C. Legg, from Birmingham University O.T.C.; Sept. 11th. Pte. W. V. Radford, from Inns of Court, O.T.C.; Sept. 21st. Pte. P. G. White, from Lond. R. (T.F.); Sept. 30th. Acting Coy. Sergt.-Major G. W. Y. Swanson from A.O.C.; Oct. 8th.

Supplementary to Regular Corps.—The undermentioned 2nd Lieuts. to be Lieuts.:—Aug. 1st: D. B. James, C. C. Godwin, D. A. Hansard, G. de L. Wooldridge, W. N. M. Dunkley. Sept. 1st: (Temp. Capt.) S. C. Callaghan, (Temp. Capt.) K. K. Horn, (Temp. Capt.) A. T. Whitelock, R. G. Bennett, (Temp. Capt.) J. H. Herring, G. G. Hubbard, C. W. Hill, J. G. Western, (Temp. Capt.) R. F. S. Morton, V. D. Bell, G. Somers-Clarke, A. Charig, (Temp. Capt.) W. P. Cort, E. H. Pullinger, M. Minter, L. A. McDougald, A. T. Thompson, E. Selby, (Temp. Capt.) J. L. Chalmers, L. C. Kidd, (Temp. Capt.) A. Heywood, (Temp. Capt.) F. Shumaker, B. W. Watts, (Temp. Capt.) B. May, T. W. Winter. The Christian names of 2nd Lieut. (on prob.) Alfred Edwin McKay are as now described, and not as in the Gazette of Mar. 27th. The notification in the Gazette of Sept. 18th of the appointment of C. G. Mallous as 2nd Lieut. (on prob.) is cancelled. The undermentioned 2nd Lieuts. (on prob.) are confirmed in their rank: A. N. David, W. M. Carlyle, F. S. Schell, P. B. Pattison, H. F. Steinberg, J. B. Ackroyd, D. J. Bell, L. R. Kerridge, W. R. Bowick, N. E. Chandler, A. Carruthers, E. F. Nash, C. Musgrave, A. Clark. The undermentioned to be 2nd Lieuts.: F. W. Beard; Aug. 18th. C. B. Willcocks; Aug. 24th. The undermentioned to be 2nd Lieuts. (on prob.): C. B. Mulville; Sept. 21st. A. C. Day; Sept. 25th. A. T. Griffith, F. H. Jefferis; Sept. 30th. H. Townend, T. Tatton; Oct. 1st.

London Gazette Supplement, October 12th.

Flight Commanders.—From Flying Officers, and to be Temp. Cpts. whilst so employed: Lieut. C. E. Wardle, Spec. Res.; Sept. 6th. Temp. 2nd Lieut. L. F. Forbes, Gen. List; Sept. 24th. 2nd Lieut. H. A. Taylor, R.W. Kent R.; Sept. 25th. Lieut. C. H. Gardner, 1st Welsh (Howitzer) Brig., R.F.A. (T.F.); Sept. 20th.

Flying Officers.—Sept. 14th: Lieut. C. R. O'Brien, R. Lanc. R., and to be sec'd.; Temp. 2nd Lieut. E. B. Mason, Bord. R., and to be transferred to Gen. List. Sept. 17th: Temp. 2nd Lieut. J. V. Aspinall, Gen. List; 2nd Lieut. M. Hayne, Lanc. Fus., and to be sec'd.; 2nd Lieut. E. S. P. Hynes, E. Kent R., and to be sec'd.; 2nd Lieut. (on prob.) P. McL. Haarer, Spec. Res. Sept. 19th. Sept. 20th: Temp. 2nd Lieut. K. B. Wild, R. Suss. R., and to be transferred to Gen. List; 2nd Lieut. L. C. F. Lukis, Essex R., and to be sec'd.; 2nd Lieut. N. E. Chandler, Spec. Res.; Sept. 21st. Sept. 22nd: Temp. Lieut. F. J. Roberts, Gen. List, from a Flying

Officer (Obs.), with seniority from Feb. 12th; Temp. 2nd Lieut. (Temp. Lieut.) J. A. Barton, Gen. List, from a Flying Officer (Obs.), with seniority from Apr. 1st; 2nd Lieut. S. A. Sharpe, R.A., from a Flying Officer (Obs.), with seniority from May 4th; 2nd Lieut. E. R. Davis, Worc. R., from a Flying Officer (Obs.), with seniority from May 29th. Sept. 23rd: Lieut. (Temp. Capt.) G. B. Lockhart, Highland Cyclist Bn. (T.F.); 2nd Lieut. H. A. Prosser, Northn. R., and to be sec'd.; 2nd Lieut. C. Musgrave, Spec. Res.; Temp. 2nd Lieut. E. Nightingale, E. Kent R., and to be transferred to Gen. List; Temp. 2nd Lieut. J. H. Tyler, K. R. Rif. Co., and to be transferred to Gen. List; 2nd Lieut. A. C. Woodman, Lond. R. (T.F.); Temp. 2nd Lieut. (on prob.) G. Douglas, High. L.I., and to be transferred to Gen. List; Temp. 2nd Lieut. H. Kirton, Gen. List; 2nd Lieut. E. C. H. R. Nicholls, R. W. Surr. R., and to be sec'd.

Equipment Officers, 2nd Class.—From Asst. Equipment Officers:—Sept. 26th: Lieut. W. H. Day, Hamps. R.; 2nd Lieut. S. Davenport, Spec. Res., and to be Temp. Lieut. whilst so employed; 2nd Lieut. W. J. Sinclair, Spec. Res., and to be Temp. Lieut. whilst so employed.

Adjutants.—From Asst. Equipment Officers:—Sept. 15th: Temp. Lieut. R. C. Lane; Lieut. G. C. Gold, Spec. Res.

Memorandum.—Pte. Leonard Charles Welford, from 2nd Canadian Divl. Supply Col., to be Temp. 2nd Lieut. for duty with R.F.C.; Oct. 2nd.

London Gazette, October 13th.

Flight-Commanders.—From Flying Officers, and to be Temp. Capt. whilst so employed:—Sept. 1st: Lieut. W. L. Robinson, V.C., Worc. R.; 2nd Lieut. A. de B. Brandon, D.S.O., Spec. Res. From Flying Officers: Capt. G. W. D. Allen, L'pool R., Spec. Res.; Sept. 23rd. 2nd Lieut. (Temp. Lieut.) G. W. Robarts, R.F.A., Spec. Res., and to be Temp. Capt. whilst so employed; Sept. 27th.

Equipment Officer, 1st Class.—Qr.-Mr. and Hon. Lieut. S. J. Payne, R.F.C., from Adjutant, and to be Temp. Capt. whilst so employed; Sept. 1st.

Flying Officers.—2nd Lieut. (on prob.) A. E. Neal, Spec. Res.; Sept. 21st. Sept. 22nd: 2nd Lieut. C. Parkinson, E. Lan. R. (T.F.); 2nd Lieut. W. L. Wells, Middx. R. (T.F.); 2nd Lieut. L. H. Jull, N. Staff. R., Spec. Res., and to be sec'd.; 2nd Lieut. P. L. Stephens, Welsh R. (T.F.); Temp. 2nd Lieut. T. S. Stewart, R. Suss. R., and to be transferred to Gen. List; 2nd Lieut. W. R. Bowick, Spec. Res.; Lieut. A. C. Maund, 8th Canadian Inf. Bn., from a Flying Officer (Obs.), with seniority from May 31st; Lieut. F. Workman, R. Ir. Rif., Spec. Res., and to be sec'd.; Temp. 2nd Lieut. G. C. Hoskins, Gen. List; 2nd Lieut. D. J. Bell, Spec. Res.; 2nd Lieut. (on prob.) C. Kennard, Spec. Res.; 2nd Lieut. O. M. Sutton, S. Lan. R., Spec. Res., and to be sec'd. Sept. 23rd. Sept. 24th: Lieut. C. S. Morice, Worc. R., and to be sec'd.; 2nd Lieut. J. N. K. Shepherd, Northn. R., Spec. Res., and to be sec'd.; 2nd Lieut. A. Carruthers, Spec. Res.; Sept. 25th. Temp. Lieut. H. D. Harman, Glouc. R., and to be transferred to Gen. List; Temp. 2nd Lieut. C. O. Bean, Dorset R., and to be transferred to Gen. List; Temp. 2nd Lieut. V. H. Baker, R. Welsh Fus., and to be transferred to Gen. List.

Flying Officers (Observers).—Sept. 26th: Temp. Capt. A. W. Field, Machine Gun Corps, and to be transferred to Gen. List; 2nd Lieut. (Temp. Lieut.) P. C. Purser, A.S.C. (T.F.); Temp. 2nd Lieut. W. O. Thomas, R. W. Fus., and to be transferred to Gen. List; 2nd Lieut. (on prob.) A. J. Bott, R.G.A., Spec. Res.; Temp. 2nd Lieut. (on prob.) H. Good, Middx. R., and to be transferred to Gen. List. Sept. 27th: Lieut. F. G. B. Reynolds, Oxf. and Bucks L.I. (T.F.); Temp. Lieut. G. M. Garro-Jones, S. Wales Bord., and to be transferred to Gen. List; Temp. Lieut. C. C. Statt, Oxf. and Bucks L.I., and to be transferred to Gen. List; 2nd Lieut. J. M. Stubbs, 3rd Hrs., and to be seconded; Temp. 2nd Lieut. R. M. Collingwood, York. and Lanc. R., and to be transferred to Gen. List; 2nd Lieut. L. H. Scott, Middx. R. (T.F.); Temp. 2nd Lieut. W. F. Findlay, K.O. Sco. Bord., and to be transferred to Gen. List; Temp. 2nd Lieut. (on prob.) D. P. Cox, Gen. List.

Adjutant.—Capt. J. C. R. Gannon, 23rd Cav. Ind. Army, vice Qmr. and Hon. Lieut. (Temp. Capt.) S. J. Payne, R.F.C.; Sept. 1st.

Equipment Officers, 3rd Class.—Sept. 1st: 2nd Lieut. A. Clark, Spec. Res.; 2nd Lieut. (on prob.) J. M. Heesem, Spec. Res. Sept. 18th: 2nd Lieut. (Temp. Capt.) C. Higham, Manch. R. (T.F.); Temp. 2nd Lieut. W. H. Tyler, Worc.

R., and to be transferred to Gen. List; 2nd Lieut. (on prob.) N. Greenwell, Spec. Res.; Temp. 2nd Lieut. (on prob.) H. S. Hawkes, Middx. R., and to be transferred to Gen. List; Temp. 2nd Lieut. W. E. Phillips, Gen. List; 2nd Lieut. (on prob.) E. F. Cameron, Spec. Res.; 2nd Lieut. (on prob.) T. Woodman, Spec. Res.; Temp. 2nd Lieut. J. L. Dearing, Gen. List.

The under-mentioned to be Temp. 2nd Lieuts. (on prob.) for duty with R.F.C.: Sergt. L. P. Ball, from Lond. R. (T.F.); Sept. 25th. Corpl. C. F. Wormull, from Lond. Electrical Engrs. (T.F.); Oct. 1st.

Supplementary to Regular Corps.—The under-mentioned 2nd Lieuts. (on prob.) are confirmed in their rank: E. A. McKay, A. E. McKay.

London Gazette Supplement, October 14th.

Flight-Commanders.—From Flying Officers, and to be Temp. Capt. whilst so employed:—Oct. 1st: Lieut. R. H. B. Ker, 3rd Pioneer Bn., Canadian Expeditionary Force; 2nd Lieut. K. H. Riversdale-Elliott, Sco. Rif.; 2nd Lieut. E. G. Landon, Spec. Res. 2nd Lieut. (Temp. Lieut.) C. M. Leman, Essex and Suffolk R.G.A. (T.F.); Oct. 2nd. 2nd Lieut. S. E. Cowan, Spec. Res.; Oct. 3rd.

Flying Officers.—2nd Lieut. C. A. Pike, Spec. Res.; Sept. 20th. 2nd Lieut. O. B. Howell, Spec. Res.; Sept. 23rd. Sept. 24th: 2nd Lieut. (on prob.) E. B. Cahusac, S. Staff. R., Spec. Res., and to be sec'd.; 2nd Lieut. (on prob.) F. Williams, Spec. Res. Sept. 25th: Lieut. J. S. Hodges, R. Fus., Spec. Res., and to be sec'd.; Temp. Lieut. B. D. Willoughby, A.S.C., and to be transferred to Gen. List; Temp. 2nd Lieut. (Temp. Lieut.) W. Baillie, Gen. List, from a Flying Officer (Obs.), with seniority from April 1st; 2nd Lieut. P. A. Russell, 2nd Lovat's Scouts Yeo. (T.F.); 2nd Lieut. (Temp. Lieut.) H. W. McGowan, K.O. Sco. Bord. (T.F.); 2nd Lieut. W. C. Thomas, R. Scots (T.F.); Temp. 2nd Lieut. R. K. Morris, Durh. L.I., and to be transferred to Gen. List; Temp. 2nd Lieut. J. A. Kirker, Gen. List; Temp. 2nd Lieut. S. H. Preston, Gen. List; 2nd Lieut. G. S. McGregor, Spec. Res. Sept. 26th: 2nd Lieut. (Temp. Lieut.) N. Hargreaves, E. Lan. R. (T.F.); Temp. 2nd Lieut. K. Crawford, Machine Gun Corps, and to be transferred to Gen. List; Temp. 2nd Lieut. (on prob.) C. A. Brown, Gen. List; Temp. 2nd Lieut. (on prob.) J. H. R. Sutherland, Gen. List. Sept. 27th: Temp. 2nd Lieut. J. C. C. Affleck, York. R., and to be transferred to Gen. List; Temp. 2nd Lieut. E. L. Zink, Suff. R., and to be transferred to Gen. List; Temp. 2nd Lieut. (on prob.) E. T. Dunford, Gen. List.

Equipment Officer, 2nd Class.—2nd Lieut. E. E. Robb, Spec. Res., from an Asst. Equipment Officer, and to be Temp. Lieut. whilst so employed; Sept. 26th, 1916.

Equipment Officer, 3rd Class.—2nd Lieut. (on prob.) A. V. Sutton, R.G.A., Spec. Res.; Sept. 18th.

Memoranda.—Temp. 2nd Lieut. E. V. D. Mathews, D. of Corn. L.I., to be transferred to Gen. List, and to be Temp. Lieut. whilst serving with R.F.C.:—Sept. 1st: The under-mentioned 2nd Lieuts. to be Temp. Lieuts. whilst serving with R.F.C.:—Sept. 1st: S. E. Pither, K.O. Sco. Bord.; R. H. Peto, 10th Hrs.; J. H. Mansfield, Shrops. L.I.; A. H. Goldie, Bedf. R.; K. H. Riversdale-Elliott, Sco. Rif.; B. P. G. Beanlands, Hamps. R.; W. McKay, Sea. Highrs.; A. L. Macdonald, R. Highrs.; A. J. G. Styran, R.F.A.; H. R. D. Simpson, 6th Dns.; M. H. Strange, R. Fus.; D. H. De Burgh, R.A. The under-mentioned 2nd Lieuts., Spec. Res., to be Temp. Lieuts. whilst serving with R.F.C.:—Sept. 1st: S. L. Pettit, R. Fus.; F. W. Morter, R. War. R.; T. R. Irons, York. and Lanc. R.; J. C. Hodges, R.G.A.; E. M. Gilbert, Essex R.; A. G. D. Gavin, R. Highrs.; F. St. J. F. N. Echlin, R. Fus.; C. F. Denning, R.W. Surr. R.; P. C. Campbell, Arg. and Suthd. Highrs.; C. L. Bullock, Rif. Brig.; E. L. B. Buchanan, R.F.A.; A. J. Bott, R.G.A.; G. K. Macdonald, Notts and Derby R.; G. A. Turner, Dorset R.; V. A. Stookes, 2nd Dns.; E. W. Edwards, R.W. Surr. R. The under-mentioned Temp. 2nd Lieuts. to be Temp. Lieuts. whilst serving with R.F.C.:—Sept. 1st: S. F. P. Polhill, R.E.; C. C. Miller, W. Rid. R.; V. A. Strauss, A.S.C. Temp. 2nd Lieut. (on prob.) J. V. Lyle, Gen. List, is confirmed in his rank. 2nd Lieut. (on prob.) H. C. Short, from R.F.C., Spec. Res., to be Temp. 2nd Lieut. on Gen. List for duty with R.F.C.; July 22nd.

Supplementary to Regular Corps.—2nd Lieut. H. M. Fleming relinquishes his commission on appointment to R.N.V.R.; Sept. 30th. 2nd Lieut. (on prob.) the Hon. C. E. St. G. Caulfield relinquishes his commission on account of ill health;

Oct. 15th. The under-mentioned resign their commissions:—
Oct. 15th: 2nd Lieut. G. G. Samuel, 2nd Lieut. J. B. Fitzsimons, 2nd Lieut. (on prob.) M. Hughes, 2nd Lieut. (on prob.) G. Smith. The under-mentioned 2nd Lieuts (on prob.) are confirmed in their rank: O. B. Howell, F. B. B. Shand, A. E. Neal, E. F. Cameron, G. S. McGregor, R. W. Mitchell, C. A. Pike, M. R. Grover, A. C. Smith, G. H. Warneken, H. W. Robinson. The under-mentioned to be 2nd Lieuts. (on prob.): G. F. Harmer; Oct. 2nd. N. H. England; Oct. 9th.

London Gazette Supplement, October 16th.

Flight-Commanders.—Major E. H. M. O'Farrell, R. Ir. Fus., from a Flying Officer (Ob.); June 29th, 1916. From Flying Officers, and to be Temp. Capt. whilst so employed: 2nd Lieut. A. L. Gordon-Kidd, D.S.O., 4th Dn. Grds.; Oct. 2nd, 1916. Oct. 3rd, 1916: 2nd Lieut. L. F. Hursthouse, Spec. Res.; 2nd Lieut. S. F. Heard, Spec. Res. Lieut. J. D. Latta, Spec. Res.; Oct. 4th, 1916.

Memoranda.—The under-mentioned to be Temp. 2nd

Lieuts. (on prob.), for duty with R.F.C.: Corpl. W. M. Edwards, from Lond. Brig., R.F.A. (T.F.); Sept. 4th. Gunner C. Rawdon-Schofield, from H.A.C. (T.F.); Oct. 7th.

Supplementary to Regular Corps.—The under-mentioned 2nd Lieuts. (on prob.) resign their commissions:—Oct. 17th: S. Douglas, H. J. Every. The under-mentioned 2nd Lieuts. (on prob.) are confirmed in their rank: R. E. Chadderton, P. McL. Haarer, F. H. Humphreys, D. K. Sworder, H. C. Baker, G. Lea, C. E. S. Russell, N. Greenwell, W. E. Bousfield, F. Williams, J. Wheatland-Clinch, W. G. Cooke, E. M. A. Van-der-Meersch, D. B. Thorp, H. Tallis, R. T. Royse, E. C. McKenzie-Martyn, G. E. Osmond, J. M. Heesem, C. S. Hickie, E. R. Yates, P. H. S. Gwilliam, P. R. Hutchinson, A. W. McAuslane, J. Goodenough, R. R. Richards, C. R. Fleming-Williams, M. F. A. Paine, F. O. Gibbon, C. J. W. Hosken, A. W. Thompson, H. J. Barwick, D. L. Hollis, W. T. Curtis, C. H. Butcher, H. B. Golding, J. J. Lovesay, J. A. McOnie to be 2nd Lieut. (on prob.); Sept. 18th.



THE FLYING SERVICES FUND—Administered by THE ROYAL AERO CLUB.

THE Flying Services Fund has been instituted by the Royal Aero Club for the benefit of officers and men of the Royal Naval Air Service and the Royal Flying Corps who are incapacitated on active service, and for the widows and dependants of those who are killed.

The Fund is intended for the benefit of all ranks, but especially for petty officers, non-commissioned officers, and men.

Forms of application for assistance can be obtained

from the Royal Aero Club, 166, Piccadilly, London, W.

Subscriptions.	£	s.	d.
Total subscriptions received to Oct. 10th, 1916..	10,854	6	5
Staff and Workers of Gwynnes, Ltd. (Twenty-fifth contribution)	8	16	2
Collected at the Westland Aircraft Works, Yeovil (Fifty-second contribution).. ..	0	16	6

Total, October 17th, 1916 10,863 19 1
166, Piccadilly, W. B. STEVENSON, Assistant Secretary.

Another D.S.O. for Zepp. Strafing.

It was officially announced on October 13th that His Majesty the King has been graciously pleased to appoint Second Lieutenant Wulstan Joseph Tempest, General List and Royal Flying Corps, a Companion of the Distinguished Service Order, in recognition of conspicuous gallantry and devotion to duty in connection with the destruction of an enemy airship.

Honours for Zepp. Strafers.

FROM the record of appointments in the Royal Flying Corps on page 899, it will be seen that both Lieut. W. L. Robinson, V.C., and Second Lieut. A. de B. Brandon, D.S.O., M.C., have been promoted Flight-Commanders and to be Temporary Captains whilst so employed.

On October 14th the parishioners in the little village in Essex among whom they have been located for some time, presented Capt. Robinson and Lieuts. Sowrey and Tempest with handsome silver cups as a memento of their deeds. There were about 3,000 subscribers to the fund for purchasing the cups.

Military Medals for the R.F.C.

IN the list of awards of the Military Medal for bravery in the field, published in a supplement to the *London Gazette* on October 11th, the following appear:—

- 491 Flight-Sergt. (now 2nd Lieut.) W. H. BOWKER, R.F.C.
- 335 Flight-Sergt. (acting S.M.) S. G. DRAKE, R.F.C.
- 8485 2nd Air-Mech. T. J. LEWIS, R.F.C.
- 252 Flight-Sergt. (acting S.M.) D. MARTIN, R.F.C.
- 4469 Sergt. J. NOAKES, R.F.C.
- 2776 1st Air-Mech. R. H. STEAD, R.F.C.
- 1196 Sergt. C. W. WAITT, R.F.C.
- 19930 Corpl. W. A. WARD, R.F.C.

Air Work in Mesopotamia.

IN the despatch—published in a supplement to the *London Gazette* on October 12th—from Lieut.-General Sir Percy Lake, dealing with the final operations for the relief of Kut-el-Amara, there are the following references to air work:

"In the hope of prolonging the resistance of Kut for even a day or two, the Royal Flying Corps and Royal Naval Air Service had dropped into Kut, between April 16th and April 29th, approximately 8 tons of supplies, besides fishing-nets, medicines and specie. Although these supplies could not materially alter the course of the siege, it was a perform-

ance which is deserving of high praise, for it involved a great strain on the pilots, and the journeys were subject to attacks by enemy aircraft of superior speed and fighting capacity. One of our machines was shot down while engaged on this supply service, another was damaged, but brought home safely with great skill.

"The Air Service, which includes both the Royal Naval Air Service and the Royal Flying Corps, has distinguished itself throughout by hard work and devotion to duty, and the assistance which it has afforded to the other arms has been invaluable. Never fully manned, it found itself, towards the end of the last advance, very short-handed and faced by one or more enemy machines of considerably greater speed and fighting capacity, but its efficient work was nevertheless maintained."

Fatal Accidents.

WHILE flying at Montrose on October 13th a machine, piloted by Second Lieut. Morrison, R.F.C., nose-dived from a comparatively low altitude, and the pilot was killed instantly.

A verdict of "Accidental Death" was returned on October 14th on Petty Officer Mechanic W. H. Hodgson, who was drowned in the River Medway. The evidence showed that he was acting as an observer on a seaplane which side-slipped, then nose-dived from a height of 100 ft. and turned over. The pilot, Sub-Lieut. Mostyn Lewis, fell clear and tried to rescue Hodgson, but could not reach him. When the machine was raised from the water Hodgson was found across his seat entangled in the wreckage.

A Human Protest by Roumania.

THROUGH M. Porumbaru, the Minister for Foreign Affairs, the Roumanian Government has sent a protest to neutral States against the bombardment of several towns in Roumania by German aeroplanes. It states that the only result has been the killing and injuring of more than 250 innocent victims, of whom over 200 were women and children. Fifty-eight bombs have been dropped on hospitals, asylums and almshouses. The Roumanian Government believes it is entitled to hold Germany directly responsible for the violation of Articles 25, 26 and 27 of the Regulations annexed to the Hague Convention, for it is German aeroplanes which fly over the towns, and it is under the orders of German commanders that the hostile armies are operating against Roumania.

THE NIEUPORT BIPLANE-SCOUT.

"SOMEWHERE in France" there is a little band of Americans, known as the American Escadrille, who are doing good work at the Front in the French flying service. The Nieuport "one-and-a-half-plane" is used by these American pilots, and we are indebted to our contemporary, *Aerial Age*, for the following

the effect of staggered planes. Both planes are slightly swept back, and the lower one has a dihedral of about 8 ins. The upper plane, in two sections, is built up on two main spars 34 ins. apart. Above the pilot's seat the plane is cut away so that the pilot can easily reach the cockpit and also obtain a good view



(Courtesy "Aerial Age.")

The American Escadrille and some of the Nieuport Scouts "somewhere" in France.—Reading from left to right are :—Lieut. de Laage, Sergt. C. C. Johnson (New York), Capt. Lawrence Rumsey (Buffalo), Sergt. J. R. McConnell (Carthage), Lieut. William Thaw (Pittsburgh), Sergt. R. Lufbery (New Haven, Conn.), Sergt. Kiffin Rockwell (Atlanta), Adj. Didier Masson (Los Angeles), Sergt. Norman Prince (Boston), who has since died from wounds received last week, and Adj. Bert Hall (Galveston).

description of this machine, the first model of which was illustrated in "FLIGHT" for March 19th, 1915.

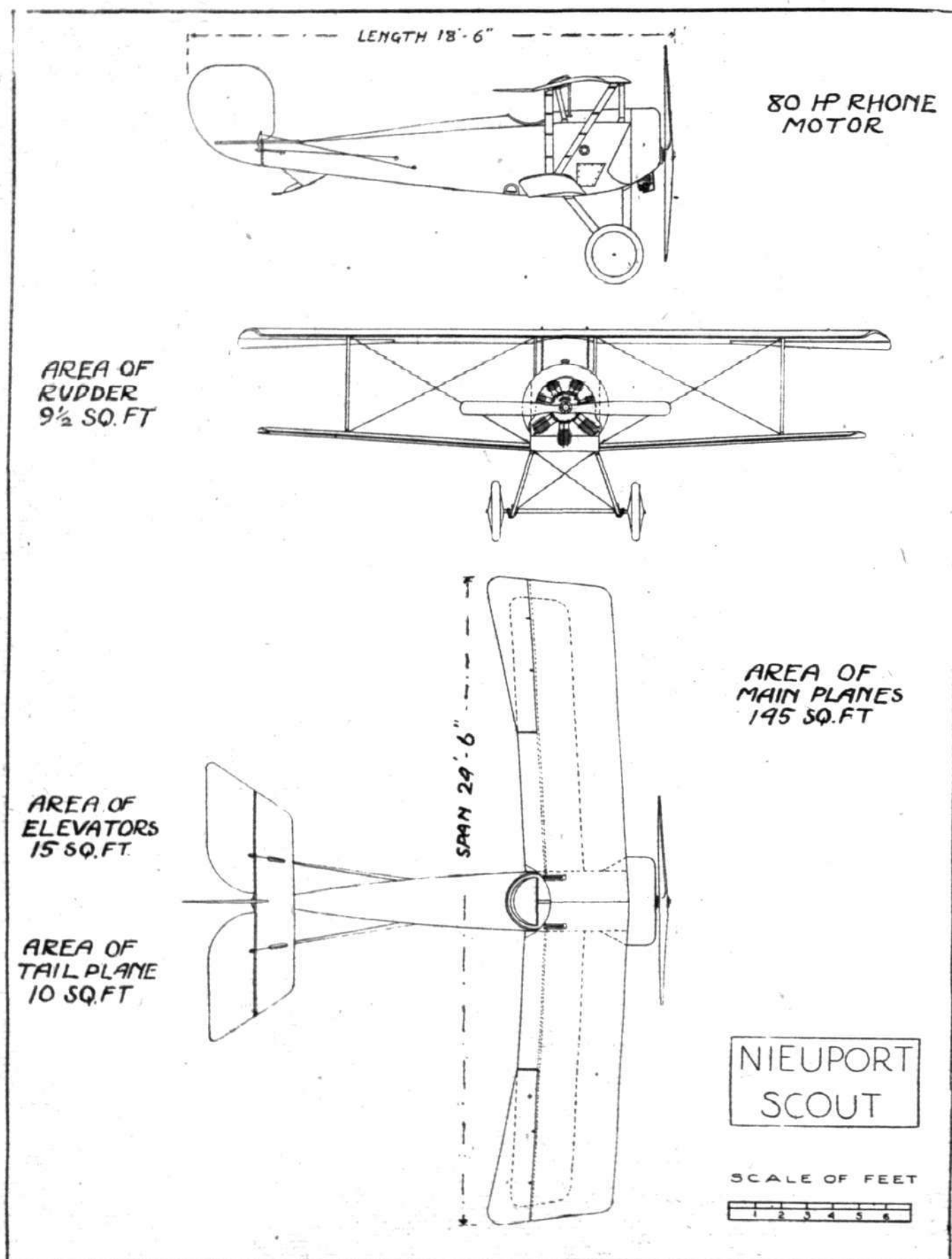
The top plane has a span of 24 ft. 6 ins. and a chord of 3 ft. 11 ins., whilst the lower plane is 23 ft. span and 2 ft. 4 ins. chord. The narrow lower plane allows a good range of vision, and the trailing edges of top and bottom planes being in line produces

above to locate other aircraft or fire a machine gun. The *ailerons*, recessed in the upper plane only, are attached to tubes—indicated in the drawing by dotted lines—which run through the plane behind the rear spar to arms mounted above the *fuselage*. These arms are connected by rods passing inside the *fuselage* to a cross bar on the control column. This arrange-



(Courtesy "Aerial Age.")

Three-quarter rear view of the Nieuport scouting biplane.



THE NIEUPORT SCOUTING BIPLANE.—Plan, side and front elevation to scale.

ment is shown in the accompanying diagram. The gap between the rear spar and the leading edge of the aileron is covered by an extension of the plane-covering. Each section of the lower plane is 10 ft. 5 ins. span, and has a single spar situated 9 ins. from the leading edge. At the centre of pressure, the inner extremity forming the attachment to the fuselage. The attachment consists of a pivoted joint whereby the angle of incidence of the plane may be varied by

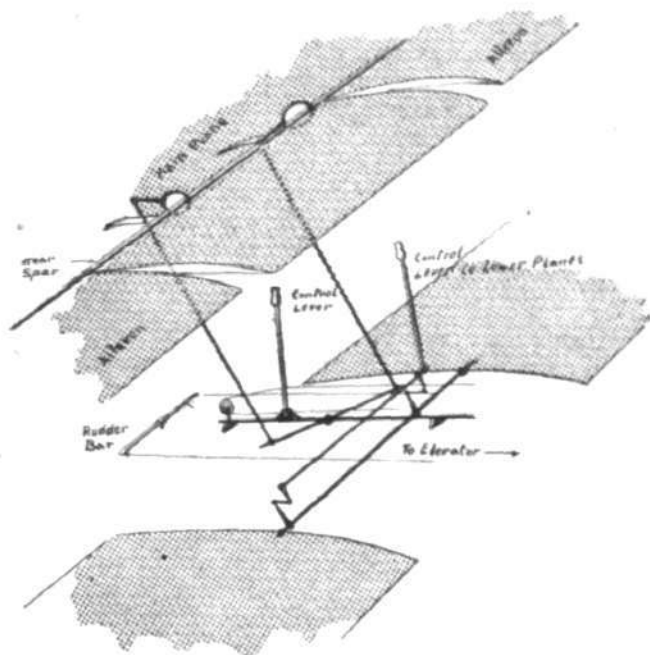


Diagram showing the controls for the ailerons and lower planes on the Nieuport scouting biplane.

rotating the spar by means of suitably arranged cranks and a hand lever.

Top and bottom planes are separated by one pair of struts on either side of the fuselage. Each pair, it will be seen, is in the form of a V, the struts converging at the bottom in a single strut-socket, which is so clamped around the spar that the latter may turn in it. The vertical member of the inclined V is 3 ft. 6 ins. in length, 4 ins. wide, with its upper end attached to the rear spar of the top plane. The inclined member is 3½ ins. wide, and has its upper end attached to the front spar of the top plane. The struts are streamlined and bound at 1 ft. intervals with silk fabric. Struts supporting the top plane above the fuselage are oval-section steel tube.



Monetary Rewards for Aviators.

AN Army Order, dated October 16th, 1916, notifies an alteration to the King's Regulations by the insertion of the following paragraph:—

"443A. Officers, warrant officers, non-commissioned officers and men are forbidden to accept presents in money from public bodies or private individuals in recognition of services rendered in the performance of their duty."

Tramways and Air Raids.

AT the meeting of the London County Council on October 17th, Mr. Hume stated that the Highways Committee had received a letter from the Finsbury Borough Council urging that steps should be taken to obviate danger to life and property by reason of sparks and flashes from tramways on the occasion of attacks on London by hostile aircraft. The question of the running of tramway cars

The tail planes consist of a non-lifting stabilising surface 1 ft. 5 ins. chord by 7 ft. 9 ins. mean span, two elevator flaps of about 15 sq. ft. area, and a large vertical rudder. The stabilising plane is stayed by steel tubes from the bottom of the stern-post, and its trailing edge, to which the elevators are hinged, consists of a steel tube. The rudder is also a steel tube, and is hinged to the fuselage stern-post.

The usual girder-box construction is employed for the fuselage, which has flat sides and bottom, a turtle-deck top following the curve of the engine cowl which is 40 ins. diameter. Vertical members are light, T section, and the covering is fabric back of the pilot's cockpit and three-ply veneer forward. The seat is a few inches from the fuselage bottom, and the wide cockpit allows for free movement of the arms. The fuselage is 33 ins. deep and 32 ins. wide at the cockpit, tapering to 12 ins. deep at the stern-post, whilst at the leading edge of the stabilising plane it is 8 ins. wide.

A V-type landing chassis is used, with a steel axle, sprung on rubber shock absorbers, carrying two 26 in. disc wheels spaced 5 ft. 4 ins. apart. The streamline chassis struts are 4 ins. wide and 1 in. thick, strongly cross-braced with cable. The tail skid, which is of ash with a steel plate shoe, is enclosed in a streamline shield of veneer. The control consists of a single vertical column in the centre of the cockpit operating the ailerons and the elevators by a side-to-side and forward-and-backward movement respectively, and a pivoted foot bar operating the rudder. The ailerons may also be operated by means of a foot bar entirely separate from the rudder bar. All openings in the fuselage for control cables are reinforced with aluminium rings, 2 ins. diameter, riveted to the fabric. Where the elevator cables go through the tail plane there are slots, 6 ins. long, with aluminium edges. Small and easily removable doors are located at either side of the fuselage permitting inspection and adjustment of the control levers, &c.

An 80 h.p. Rhone engine is used, coupled direct to an 8 ft. Levasseur tractor screw. The fuel tanks are situated at the rear of the engine in the top of the fuselage.

The following are the main characteristics of this machine: Span, top plane, 24 ft. 6 ins.; bottom plane, 23 ft.; chord, top, 3 ft. 11 ins.; bottom, 2 ft. 4 ins.; supporting area, 145 sq. ft.; gap, 4 ft. 2 ins. (centre), 3 ft. 5 ins. (tips); length overall, 18 ft. 6 ins.

during aid raids had been fully considered, and the extreme importance of the matter in relation to the protection of London was recognised. In the operation of the tramway services at times of threatened or actual air raids the Council acted in close touch with, and under the direction of, the military and police authorities.

Another Transatlantic Project.

FROM Copenhagen comes word of another proposal to fly across the Atlantic. This time it is the Swedish pilot, Capt. Hugo Sundstedt, who is said to have worked out his plan with the help of Mr. Henry Farman. He will, however, use a Curtiss type machine, and is now crossing to New York to personally superintend its construction. Details of the machine are not forthcoming, except that it will have six motors, each of 260 h.p., and will be able to fly 30 hours with three passengers. The Transatlantic voyage will be made from Newfoundland via Ireland.



ALTHOUGH the sun is shining to-day, there is a nasty cold snap in the wind telling of the coming of winter. With a fire in my room for the first time, and the blinds closely screening all windows on account of the lighting regulations, the aspect is entirely cheerful; and so I can pull my armchair to the friendly blaze, whilst turning over the leaves of my pocket diary, to look for the falling of Christmas Day, the third Christmas of the war.

It is but a little over eight weeks. In eight weeks we should be making merry with holly and mistletoe, with presents and good cheer, with greetings of good fellowship, yet I think 1916 must be a dull old Christmas, and one full of sorrows and heart-aches.

I had hoped against hope that this ghastly business of killing would have been all over before another Yuletide, but it seems that it is not to be, and our boys must spend yet another one away from the friendly hearth, and the question is, what are we going to do for them?

I am afraid many of those diligent knitters of the early days have fallen off in enthusiasm, and that comforters and warm underclothing are not being supplied in such quantities as before, yet the winter will be just as severe, and warm clothing just as welcome. If "Sister Sue" does not feel quite so eager to sew as she did, our boys are not slacking off one bit in their determination to win through, even though half-a-dozen Christmasses come in between.

I know from personal letters received from the front what it is most desirable, from the boys' point of view, should be sent out. There are three more prominent things, warm comforters and knitted things, cigarettes and tobacco, and tinned fruits. A tin of peaches or pineapple is something to a man who is living on bully-beef and biscuits, and every man of him has got a dinky knife with a tin-opener in the end.

This war is a horrible business. Of all the stupid ideas ever entering the brain of man, surely war as a method of settling disputes is the stupidest. Just because somebody thinks he wants that which he has no possible right to have, millions of men must be sent to their death. If I had my way, the first person who hinted at the breaking off of "diplomatic relations" should be taken out and hanged on the nearest tree. Well, we can't hang him, at least not yet, and so in the meantime let us set about getting our little parcels ready. There is not a great deal of time to spare now, and there may be delay later on owing to the congestion of traffic, so let us set about it at once. A parcel arriving two days after Christmas is not in time to prevent our boy thinking that we had forgotten him or did not trouble overmuch.

Several times I have seen the Somme film, hoping each time that I should find a length added showing something of life in the Flying Services at the front, but I have not struck lucky yet. I can think of nothing the general public and those R.F.C. boys who have not yet been out, would take more interest in than a long film showing the life of men in the Flying Services on active service. It would be the delight of my life to be sent out there to photograph them and write them up, and I promise you I would make interesting pictures and reading. Apart from all else, I feel sure it would do an immense amount of good from the point of view of instruction to those who have not yet realised active service.

I will admit that until I saw the Somme Film, I had a very wrong idea of the life our boys were called upon to lead when fighting for their country, and the effect it had upon me was that I should like to be out there with them. I do not close my eyes to the ghastliness of the whole affair, but it has its compensations, of which Tommy knows how to take full measure.

With the waning of the moon this week, I suppose we may expect further visits from the gas-bags, with the liberating of more hydrogen. We have come to look upon the flare-up as a pretty foregone conclusion after the last few visits, and shall wonder what is the matter if it is not repeated. It is strange that during the whole time the present moon has been with us to allay the fears of the nervous ones, the wind has also lent its aid in making raids an impossibility. Now that the moon is failing, I suppose the wind will also fail. However, the winter is upon us, when Zepps. will cease from troubling over-frequently. And, really, what have they done? At the end of a long summer, providing possibilities innumerable, the damage of a military nature done in all the numerous raids over this country amounts to nothing. Not once, so far as we are allowed to know, and I believe we know the truth, has a single building having a direct influence on the war been hit. Seeing the cost of these brutes, the trouble of organising a raid, and the expense of carrying it out, the game does not really appear to be worth the candle. I am doubtful whether the whole business of giant airships is of much account, anyway. Possibly as the eyes of a fleet, they would be most valuable, but failing that, and the small amount of damage they do here, and the fact that they do not appear to be able to use them over the trenches, what use are they? In my humble opinion, they are but things of a period, tried out and found wanting. I believe the work which they are supposed to do, and cannot, will on future occasions be done by the giant aeroplane. Everything appears to point that way at the moment.

ANSWERS TO CORRESPONDENTS.



If in doubt about anything aviatric, write to "FLIGHT" about it.
J. B. W. (Monkseaton).

You are quite right in assuming that a rotary engine has a gyroscopic effect on an aeroplane when turning. Not only has the engine, but also the propeller, a gyroscopic effect, and it will even frequently be found that the effect of the propeller is greater than that of the engine. A numerical example will help to illustrate the magnitude of this gyroscopic couple. Let us take a rotary engine of 100 h.p., and assume that it is installed in an aeroplane flying at 100 m.p.h., and further, that the machine makes a turn in a complete circle of 400 ft. diameter. The gyroscopic couple is then expressed by the equation $M = m\lambda^2\omega\Omega$, where m = mass = weight of engine ÷ gravity. Taking the weight of a 100 h.p.

rotary engine as 280 lbs., we have $m = \frac{W}{g} = \frac{280}{32} = 8.75$.

λ = radius of gyration of engine, which we shall take as 1 ft.
 ω = angular velocity of rotation, in radians per sec., and
 Ω = angular velocity of displaced axis, in this case the aeroplane's rate of turning. If we take the number of revolutions

of the engine as 1,200 per min., we have $\omega = \frac{1,200}{60} \times 2\pi = 125$. As the machine flies at 146 ft./sec. and describes a circle of 200 ft. radius, it completes one circle in

$$\frac{2 \times 3.1416 \times 200}{146} = 8.6 \text{ sec. } \therefore \Omega = \frac{2\pi}{8.6} = 0.73.$$

Substituting in the formula we have gyroscopic couple = $M = 8.75 \times 1^2 \times 125 \times 0.73 = 798.4$. The gyroscopic couple is therefore 798.4 lbs. ft. If the area of the elevator is 13 sq. ft. and acts at a distance of 20 ft., the turn in question imposes a load of about 40 lbs. on the elevator, or nearly 3 lbs./sq. ft. It should be pointed out, however, that the fixed tail plane carries its share of this load. If the engine revolves clockwise (as seen from the pilot's seat), the effect of the gyroscopic couple in a left-hand turn will be a tendency for the tail to drop, a right-hand turn having, of course, the reverse effect. There are various advantages in multi-planes over biplanes, for the same reason that when a certain limit is reached the biplane construction is preferable, from the point of view of strength to weight ratio, to the monoplane. Thus, for very large machines, where it is desired to keep the span within reasonable limits for purposes of housing and other considerations, it may become common practice to resort to the multi-plane formation. Even for small machines there would appear to be certain advantages in employing three or four planes instead of the now usual two. For instance, although there is a certain amount of interference taking place with superimposed planes, this is partly counteracted by the fact that if each plane of a biplane is divided into two of the same overall span, the chord of each is halved and therefore the aspect ratio doubled. Also, in a narrow chord the travel of the centre of pressure is shorter, and it may become possible to use one strut only where a pair was formerly employed, thus saving resistance. We cannot say for certain what is the maximum attainable height for a modern Zeppelin with full load: probably some 15,000 ft.

H. B. (Fareham).

The disposition of the engine gondolas on the latest Zeppelins is not quite clear, but it appears that there is one in front, rather elaborately constructed with covered-in sides and top, and providing accommodation for the commander and helmsman. The engine of this front gondola, as far as we can make out, drives a single screw placed behind the gondola. The rear gondola appears to have contained three engines, two of which drive the side propellers, while the third drives a stern propeller. The observation car, when not in use, is probably placed in a recess in the keel of the main hull, so that the observer can enter it through a trapdoor in the communication passage running from the front

to the rear gondola. Once inside the observation car, he would close the little trapdoor in the roof through which he entered and give the signal to be let down. With regard to the swinging of the car and its effect on the stability of the airship, the car is fitted with fins so as to keep it always head on to the wind, so that probably there is very little swinging. The number of ballonets that would have to be pierced before the airship descended would depend on whether she was loaded or not at the time; if light, one or two of the ballonets could probably be nearly emptied without necessarily forcing the airship down, as her engines would help to support her *via* the side propellers.

H. B. (Horsham).

A brief consideration will show why a very efficient machine may be more dangerous than a less efficient one when suddenly flattening out after a steep dive. Suppose that one machine flies at a speed of V m.p.h., and has, at that speed, a gliding angle of 1 in 6. If this machine is dived vertically, the earth's attraction is equal to the weight of the machine (W). The speed of the machine on the vertical dive (with the engine switched off) will continue to increase until the resistance $1/6W$ is increased to W . If the resistance is assumed to increase as V^2 , the velocity at which the resistance is equal to W is $\sqrt{6}V = 2.45V$. In other words, the maximum speed on a dive, with the engine switched off, is 2.45 times the normal flying speed. Now, suppose that it is possible to cut down resistance without altering any other of the aeroplane's characteristics until the gliding angle becomes 1 in 12. By the same reasoning as in the first case, the velocity at which resistance becomes equal to W is $\sqrt{12}V = 3.464V$. It will be easily appreciated that a sudden flattening out will impose far greater stresses on the latter machine than on the former. We have even known designers who kept up body resistance for this reason, although in modern times and with careful piloting there is no necessity, nor apparently any tendency, to do so.

Airman (Portsmouth).

The pay of a Flying Officer is 12s. plus 8s. flying pay; when training 7s. 6d. a day. The kit allowance is, we believe, £50 for an officer appointed to the Special Reserve.

G. W. F. (Redcar).

See reply to "AIRMAN" above. Apply to the Director-General of Military Aeronautics, Admiralty House, London, E.C., for the necessary forms.

A. B. C. (Cheltenham).

We understand that up to the present there has been no need to provide for the contingency you suggest. If the officer's services could not be utilised in any way, no doubt he would be invalided out of the Service.

New Reader (Dublin).

A copy of "FLIGHT" for December 10th, 1915, with scale drawings and description of the Fokker monoplane, can still be obtained, price 3d. post free.

F. B. (Curragh).

There are no special qualifications, and you should apply in the usual way for a transfer to the R.F.C. as an Observer. If your application is granted you will be sent to a school for a course of training. Your experience should certainly assist you in your application.

M. (Norfolk).

The badge signifies that the officer is a qualified Observer attached to the R.F.C. The grounds you mention are Government training centres, and that explains why no reference can be made to the flying there.

S. G. T. (B.E.F.).

Apparently, as the injury was caused by an accident, you would not be entitled to wear the gold stripe.



Copyright, F. N. Birkett, from the F.N.B. Series of Aviators.

A Group of Pupils who have taken their Royal Aero Club Certificates recently at the Beatty School of Flying, Hendon.—(1) Messrs. P. Rudd, (2) J. W. Towson, (3) G. C. Champion, (4) W. G. Edwards, (5) A. W. Kay, (6) B. J. Curry, (7) R. H. New, (8) H. E. Martin, (9) H. V. M. Hoskins, (10) B. Roberts, (11) D. Mitchell, (12) G. W. Dowding, (13) A. W. Wood, (14) Mrs. C. E. Wilkinson, (15) Messrs. J. A. Davy, (16) C. W. Skeet, (17) F. W. Knox, (18) J. S. de Wilde, (19) B. J. Earl, (20) W. W. A. R. Murdoch, (21) H. J. H. Garlick, (22) W. E. Jones, (23) E. Venables, (24) G. McPherson, (25) R. A. S. Phillips, (26) P. S. Whitmore, (27) V. G. Austen.

AIRISMS FROM THE FOUR WINDS.

"I SHOULD perhaps also have mentioned Sir Maurice Hankey, Secretary of the War Committee, to whom we are very considerably indebted for the first suggestion that something of this kind *should be tried*."

Thus—the italics are ours—Mr. Lloyd George, in the Commons last week upon the subject of to whom credit is due for the original putting forward the idea of the "Tanks" for strafing the Huns. It is quite conceivable that Mr. Lloyd George is correct in his statement that the suggestion they *should be tried* came from Sir Maurice. The Minister for War should assuredly be in the position to know. But what we, and most people are concerned about, is who was the man to lay originally the whole scheme—drawings, details and suggestions all complete—before the powers that be in 1914 soon after the start of hostilities. What is wanted is names in conjunction with dates. "FLIGHT" has already given his name, so there is no need to repeat it now. Possibly, as Secretary of State for War, Mr. Lloyd George has not the same opportunities of perusing our pages as he had as Munitions Minister, but it might be worth his while to have a glance at "FLIGHT" of September 21st, page 802, and then make a few inquiries in the right quarter.

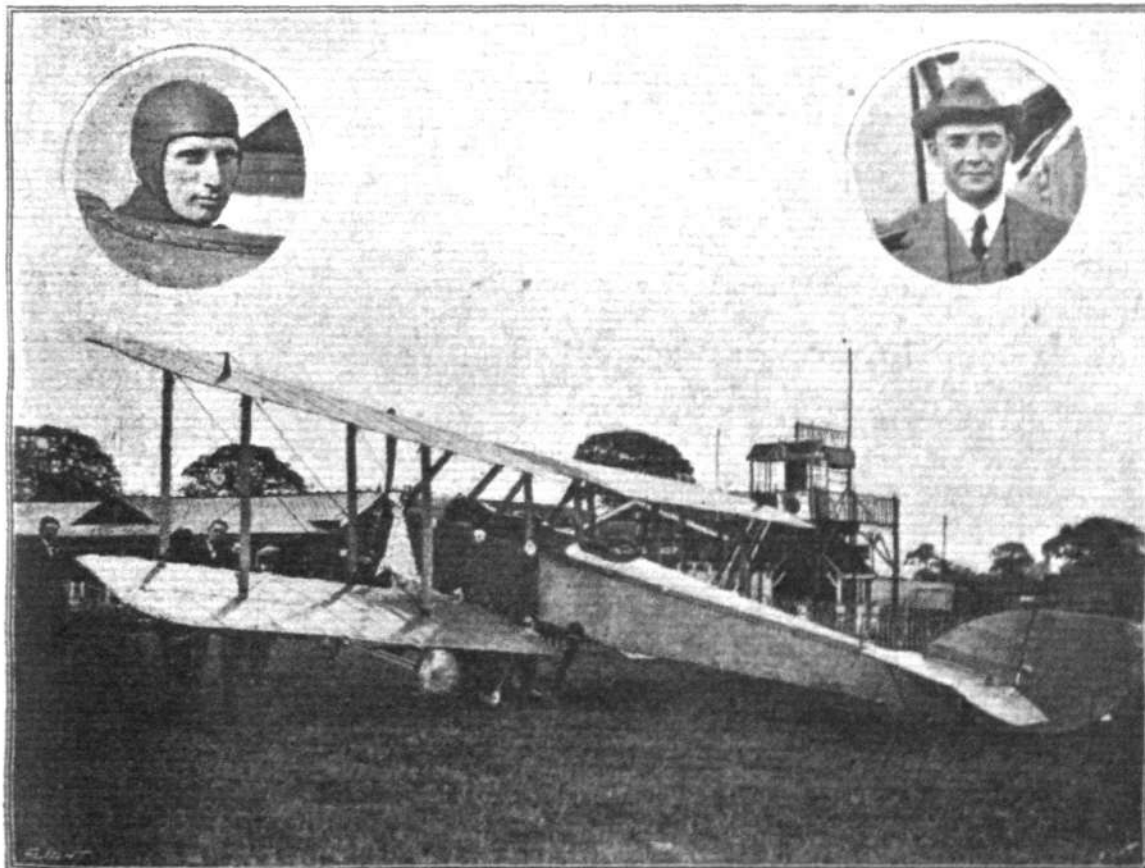
THEORETICALLY, according to the usual irresponsible Parliamentary Ministerial babble, pensions follow automatically the break-up or permanent invaliding out of our gallant men who joined up to fight the common enemy of the world. In practice the result is ghastly. Truly, it's about time a single Pensions Authority was appointed if cases on a par with the one quoted below are as common as it is alleged by Sir Frederick Milner, in a letter of indictment issued

publicly this week. Sir Frederick, who is no sentimentalist, after quoting some horrible experiences of our poor maimed heroes, gives the following as "another shocking case in the Navy": "A young fellow earning 50s. a week as chauffeur, enlisted. His employer, who had him in his service several years, states he was never sick or sorry. The local doctor who knows him well, said he was as sound as a bell when he enlisted. He joined the Royal Air Service, and contracted consumption. He was awarded the handsome pension of 3s. 6d. a week for three months, or a magnificent total of £2 2s." What an indictment of official ineptitude and national appreciation of our fighting men.

WONDER if an "alibi clock" has anything to do with Zepp. raids in combination with summer time changes and the vagaries of street and house lighting. A solicitor in a case at the Stratford Police Court the other day described the mystic article thusly: "Some people tell the time by an alibi clock: it strikes twelve, the hands point to half-past four, and the right time is seven."

A SIGN of the "coming of the aeroplane" is to be found in an incident which occurred last Friday. On that day the Stores Department at the Red Cross Headquarters in Pall Mall received an urgent request for an oil immersion lens for a microscope in a hospital laboratory at Calais. There being no boat available, the lens was despatched by aeroplane, and arrived both safely and in time.

WHAT possesses the memento-hunting imbecile in times like the present to hunt for bits and pieces concerned with the Hun night marauders, and having secured some uncon-



A "Live" Combination.—A Martinsyde biplane and, inset, its pilot and pilot-owner, H. Sykes and C. H. Stevens. Sykes has for some time past been putting up wonderful stunts on this machine. Although bearing the marks of a nasty aeroplane smash experienced early in the year, Stevens was so keen on flying as to buy the machine and learn to fly it under the tutorship of Sykes.

sidered trifle, proceed to treasure it up in secret, without first ascertaining from the authorities whether the apparently useless item has any military value attached to it. It is almost inconceivable that it should be necessary for the authorities to issue peremptory notification to the effect that it has come to their knowledge that certain valuable documents, portions of note-books, &c., which fell from, or belonged to, a crew of the raiders, are still in the possession of members of the public, and asking for their return. It is to be hoped that these treasure trove seekers duly handed in their finds by Tuesday last, until which day grace was given by the military authorities, backed by the promise of a reward, or they will thoroughly merit the punishment which at the same time was threatened for non-compliance with the request. It must be obvious that there are considerable possibilities of valuable information for our military from documents and parts of the fallen aircraft which are still being held back.

NONE too soon the Government has permitted assistance to be given from the Prince of Wales' Fund to persons who have suffered in consequence of the recent night airship raid. These grants, which must not exceed £20 in each case, are purely by way of relieving distress, the lawyer wariness of the Government prompting the attachment of the condition that the grant is in no case "by way of compensation for damage." It is to be hoped that all the disbursements of this very magnificent Fund have been and will be as healthy as those which may result in this new departure.

ANTWERP is getting nervous of night trouble from the air.

SOME of our readers should be able to help Lady Drogheda—who has quite an original scheme in hand for November—to help forward her supply depot at Moore Park and the Red Cross. Lady Drogheda has been a keen collector of aeronautical prints, and these she proposes to place on view at Bond Street Gallery. Her collection totals up to about 300, and already many others are promised on loan from famous private sources. A special attraction of the show should be a series of sketches by Mr. John Lavery of present-day aircraft, which carry with them the *cachet* of official permission. The little exhibition should attract a good "gate," and we feel sure Lady Drogheda will welcome any further additions to the exhibits.

SIGNIFICANT of the times was a bright light high up in the sky on Monday night, travelling at a great speed. Possibly in the years to come we shall take little notice of such happenings: just now it points to progress and adaptability.

WITH the letter Z standing for Zeppelin, is it an omen that the running letters R.S.T. are also at the tail end of the alphabet? They are the initial letters in proper rotation of the three strafers. Perhaps before long the gaps in the alphabet may be completed.

IT is a wonder that none of our clever cartoonists have struck the idea of drawing the statue of Liberty holding up a dollar in place of the torch. If it has been done we have not seen it, and it appears that it would fit all right.

NEXT year's Academy should include some interesting aeronautical subjects.

APPARENTLY the success of W. L. Wylie, Gordon Crosby and the late Cyrus Cuneo have set some of the R.A.s thinking.

WHAT about an aviation picture from the brush of Mr. John Lavery. A change from Society portraits.

MORE Hun strafing. 129,040 people visited the exhibition of Zepp. relics during the three weeks it was opened, and over £1,000 was deposited in the collecting boxes for the benefit of the City of London branch of the British Red Cross Society and the Lord Kitchener Memorial Fund.

PERHAPS one reason why the Zepps. have not visited Paris recently is because the old Count is anxious about those three "Louis" chairs which he ordered before war was declared and for which he sent the tapestries to Paris. Anyway, the Paris Courts have sequestered them for the duration of the war.

"Now we know how it is done!" "Yes, it's wonderful how they bring them down," said Flapper No. 1 to No. 2 on the top of a 'bus, "they've got a new kind of searchlight, my dear; I've seen it. It's got a bright blob on the end that burns them up!" Well, perhaps the clouds will roll away one day, and we shall then know the exact strafing formula.

TEN YEARS AGO.

Excerpts from the "Auto." ("FLIGHT's" precursor and sister Journal) of October, 1906. "FLIGHT" was founded in 1908.

THE GORDON-BENNETT CUP.

The third place in the Gordon-Bennett Race, as we last week anticipated, has now definitely been awarded to the Hon. C. S. Rolls. The delay in placing him was due to the necessity of very carefully estimating the distances travelled by the third and fourth competitors.

M. SANTOS DUMONT'S AEROPLANE—SOME REFLECTIONS.

There is no further news of M. Santos Dumont's progress, for the natural and simple reason that his machine is probably still being repaired after the smash which we chronicled some time ago. Looking at the construction of the machine, two things impress one very forcibly—the enormous length of the front tail and the absence of a rear one. The front tail consists, as will be remembered, of a sort of girder projecting from the centre of the aeroplane proper, and on the end of this girder-like structure is carried a box, the upper and lower planes of which can be turned (parallel to one another), so as to direct the whole machine upwards or downwards. The top and bottom of this box, in fact, correspond to the two horizontal planes of the forward tail in the Wright machine, but their enormous distance, comparatively speaking, from the centre of gravity of the whole structure certainly disposes one to the belief that a very slight movement in either direction will produce very violent effects in altering the inclination of the whole machine, more violent than the skill of the aeronaut is likely to be able to control. This is certainly in accord with what has already happened, the machine rising, when it did rise from the ground, at a very considerable angle, and maintaining it till it struck the ground again, the propeller first touching the earth.

There certainly also appear to be grounds for supposing that something in the way of a rear tail will have to be adopted, for it is only a vertical rear tail that has hitherto, so far as can be judged, been successful in bringing an aeroplane into a horizontal position when, from gusts of wind or other causes, one side is lifted more than the other.

THE CORNU FLYING MACHINE.

Recent experiments with this machine, which have been conducted in the former Gillotin workshops, are said to have been remarkably successful. The machine was arranged so as to run along and be checked in its rise by a telescopic rod, which allowed it to rise 3 metres, and it rose in the air most satisfactorily and maintained a steady course. It was driven by a 2 h.p. motor, which actually gave 1½ h.p., and raised itself in the air with facility, its weight being nearly 14 kilogs. M. Cornu is proceeding to the construction of a considerably larger machine on the same principle, to be furnished with a 25-30 h.p. motor and designed to carry a passenger.

THE VUIA AEROPLANE.

Further experiments have been made with this machine recently at Issy-les-Moulineaux. The apparatus, as our readers will call to mind, consists of a single pair of wide, outstretched wings, providing a total surface of 20 square metres, below which is suspended a rectangular frame running on four bicycle wheels and carrying the motor and propeller. A peculiarity of the arrangement is that the motor is driven by liquid carbonic acid, a method of obtaining power which has not hitherto been conspicuous for its lightness. The propeller on the machine, as it now exists, is two-bladed, and is 2.20 m. in diameter. During the recent experiments, which were made on a long flat road, sufficient lifting power was produced by the action of the propeller to cause, on one attempted flight, the four-bicycle wheels of the machine to leave no apparent tracks on the ground for a distance of 4 metres. On another occasion, when the aeroplane was given a slightly different angle, the two front wheels were lifted well into the air. Nothing more nearly approaching free flight was accomplished.

WEIGHT AND TORQUE OF AERO ENGINES.

In his presidential address before the Institution of Automobile Engineers, the incoming President, Mr. L. A. Legros, criticised at considerable length the educational system of this country. In his opening remarks, however, he summarised the progress made in the design of petrol engines, and gave some instructive tables of weights, &c., regarding

tests as curves of brake horse-power, many also plot the torque curve, and others plot curves of fuel consumption. I have already expressed the opinion that the torque curve gives more information about the performance of an engine in a car than is apparent from the horse-power curve; moreover, it gives the data in the form in which they are actually wanted for all traction problems. In order to compare the torque curves of various engines of different dimensions, for heavy or light traction on land, for marine work and for aerial navigation, it is necessary to reduce all the torque curves to a common basis, and for this I have adopted torque per lb. of weight. Dimensionally, $\text{torque} = \frac{ML^2}{T^2}$ and $\text{weight} = \frac{ML}{T^2}$, hence torque per pound =

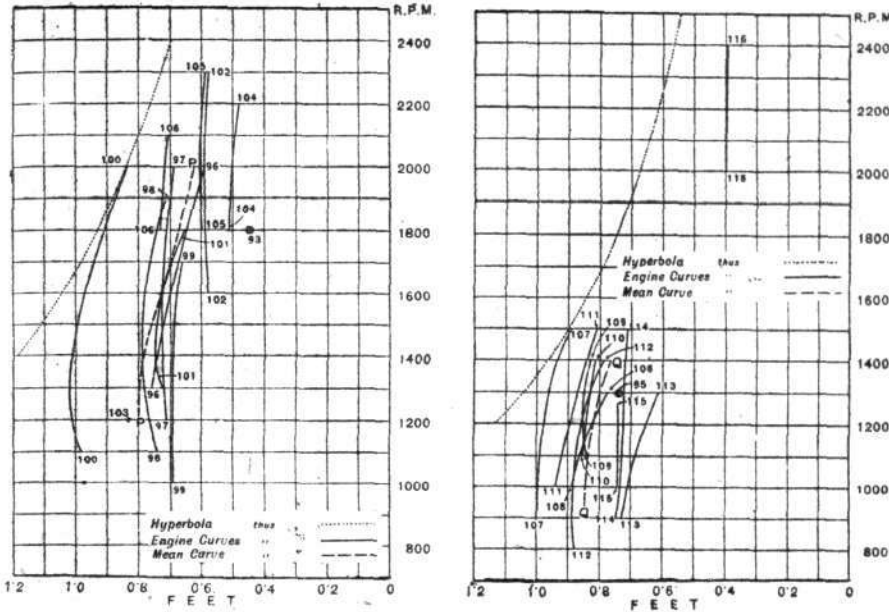
$$\frac{ML^2/ML}{T^2/T^2} = L,$$

that is a length which I will term the *effective radius* of the engine. If a gear wheel be supposed to be fitted to the crank-shaft of the engine and to engage with a vertical rack, the effective radius for the engine at any particular speed is the maximum pitch radius which this wheel can have to allow the engine to climb the rack.

"An example of a torque curve was given early in the proceedings, but no general comparison of torque curves appears to have been made up to the present. To remedy this deficiency I have made application to the best known engine and automobile manufacturers in this country, in allied countries and in America, as well as to other authorities, with the result that I have been enabled to obtain curves and data for 130 engines."

Mr. Legros then gave figures and graphs relating to various classes of engines, and we reproduce on next page those of the different types of motors for aircraft work.

"From the form in which the data have been supplied it has not been possible to fix a uniform basis throughout the comparison, but generally the weight of engines has been taken to include the magneto, the carburettor, the exhaust



"Aeroplane engines may be divided roughly into four classes—vee, vertical, radial and rotary. The curves for these are shown in Figs. 1, 2, 3 and 4 respectively, and the mean curves, P, Q, R, S, are given together in Fig. 5, in which

Vee-Type Aero Engines.

No.	Cyls.	Bore.	Stroke.	Water. lb.	Engine. Dry. lb.	Total. lb.
93	8	90	120	—	375	375
96	12	100	140	—	625	625
97	12	100	140	—	625	625
98	8	105	140	—	450	450
99	8	100	140	—	450	450
100	8	120	130	140	416	556
101	12	4.50	6.50	250	871	1,121
102	12	92	135	212	745	957
103	8	120	160	140	688	828
104	12	90	150	180	940	1,120
105	12	92	139	192	750	942
106	12	110	164.5	290	1,000	1,290

Vertical-Type Aero Engines.

95	4	140	146	25	329	354
107	6	142	175	175	592	767
108	6	142	178	145	597	742
109	6	140	160	160	595	755
110	6	140	160	150	595	745
111	6	130	175	132	538	670
112	6	130	175	132	538	670
113	6	140	152	103	597	700
114	6	4.0	6.0	75	380	455
115	4	140	146	25	329	354
116	6	81.5	155.5	90	535	625

Radial-Type Aero Engines.

94	3	105	130	—	165.3	165.3
117	14	120	140	176	761	937
118	9	122	140	135	500	635
119	9	5.0	6.0	—	300	300
120	7	120	140	85	490	575

Rotary-Type Aero Engines.

121	9	112	170	—	330	330
122	9	126	160	—	380	380
123	9	110	150	—	286	286
124	9	110	150	—	286	286
125	7	120	150	—	246	246
126	9	105	140	—	260	260
127	7	124	145	—	215	215
128	7	124	145	—	212	212
129	7	124	145	—	210	210
130	7	124	140	—	209	209

Dimensions in mm. are in roman type.

Dimensions in inches are in italic type.

Weights used in calculation are in heavy type.

they can be compared with the mean curves of the other classes of engines drawn to the same scale.

"On these drawings there are three isolated points relating to early steps in the foundation of aviation; these points are numbered as follows:—

"93. The Renault 8-cylinder air cooled vee type engine (k) with which H. Farman made the first cross-country flight from Chalons-sur-Marne to Rheims, October 30th, 1908.

"94. The Anzani 3-cylinder air cooled radial type engine (l) with which L. Blériot made the first cross-Channel flight, July 25th, 1909.



The Aeronautical Institute and its "Supporters."

LORD MONTAGU of Beaulieu is desirous of having it known that the "Institute" is not authorised to use his name in connection with their affairs for any purpose whatsoever. Lord Montagu has previously written withdrawing his name, but he understands it is still being used by the "Institute."

German Aviators Interned.

A GERMAN aviator who dropped bombs on Belfort on the afternoon of October 13th was forced to land, owing to lack of petrol, at Soleure, Switzerland, and has been interned.

According to the *Maasbode*, a German aeroplane landed near St. Kruis, in Holland, last week, and the occupants have been interned. The *Echo Belge* also reports that a German aeroplane crashed near Wavre, but nothing is said as to the pilot.

"95. The Green 4-cylinder water cooled vertical type engine (m) with which S. F. Cody made the circuit of England in 1911.

"On the summary, Fig. 5, the tangent hyperbola to the mean racing car curve is drawn, and it is interesting to note how close to this curve lie the points 93, 94, and 95; the vertical engines have progressed since that day, but not so markedly as have the vee and radial types. It is very

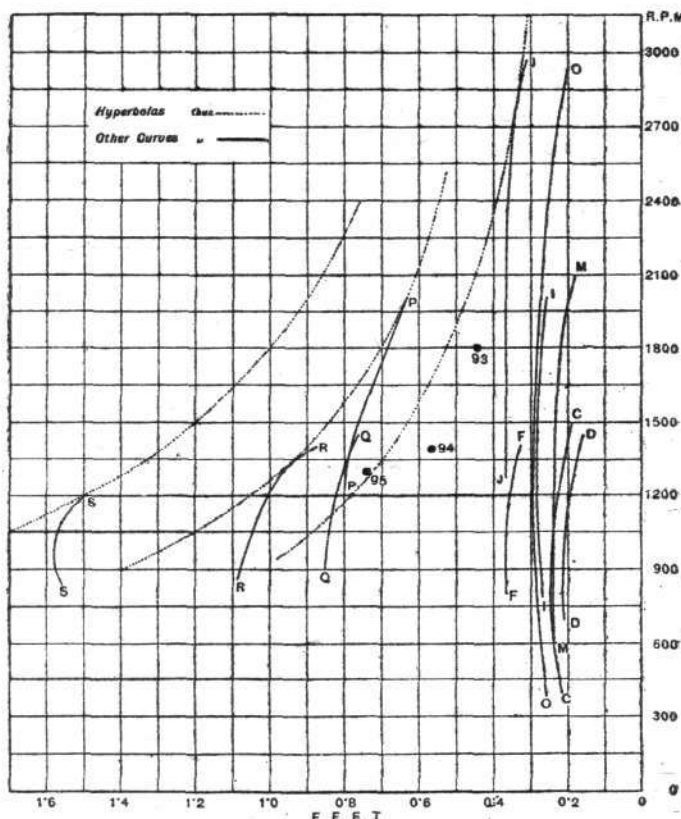


Fig. 5.—Mean equivalent radius; curves compared. References: C, commercial vehicles, 1913-16; D, public service vehicles; F, engine builders, 1911-16; I, 4-cyl. passenger cars, 1913-16; J, 4-cyl. racing cars, 1911-16; M, 6-cyl. passenger cars, 1913-16; O, 12-cyl. passenger cars, 1914-17; 93, Renault: cross-country flight, 1908; 94, Anzani: cross-Channel flight, 1909; 95, Green: circuit of England, 1911; P, vee-type aero engines; Q, vertical-type aero engines; R, radial-type aero engines; S, rotary-type aero engines.

remarkable that the mean curves for both the last mentioned types have the same tangent hyperbola. But it is when we consider the rotary aeroplane engine that we realise to the full what progress has taken place in weight-saving in the short space of five years, for these engines have a mean effective radius some 50 per cent. greater than that shown by the mean curve for radial engines, and nearly double that shown for the vertical and for the vee types. Some of these types of engines, it is true, are fitted with a reduction gear, but the tangent hyperbola which defines the limit so obtainable shows that at present they do not average more than 70 per cent. of the corresponding effective radius of the rotary type."



Lights on Air Raid Nights.

A FINE of 19 guineas was imposed on Brigadier-General Charles Stewart Prichard, C.B., D.S.O., of Ruston House, Patrington, at an Eastern County Petty Sessions on October 13th for an unshaded light on an air-raid night.

At the same court a farm servant was fined 2 guineas and 10s. costs for striking a match on an air-raid night.

Some other cases of match-striking are referred to in a leader on page 896.

The Zeppelin "L 33."

It has been announced that the Zeppelin "L 33," which came down near the Essex Coast, was 680 ft. long and had four gondolas, one containing three 6-cylinder 240 h.p. engines, while each of the three other gondolas contained a similar engine; there were five propellers. She was fitted with 60 bomb-droppers, five machine guns and two light quick-firers.

AVIATION IN PARLIAMENT.

IN the House of Commons on October 12th, in the debate on the Vote of Credit, Mr. Lynch said: I will proceed to another aspect of the question, that is the matter of aeroplanes. Some of us in this House from the very beginning of the war began to agitate for a great aeroplane fleet. Members of the Government, in their usual style of superior knowledge, pooh-poohed that idea as something impossible, and then, after a very long period, they adopted the expedient of forming a Board. We want an aeroplane fleet which will give us a mastery of the air, which will be the cavalry of the air, which will be one of the decisive factors in winning this war; the Government has given us a Board—a Board devised after a style more or less familiar of doubtful joint stock companies in the City which begin by giving a front-window dressing of well-known names.

The representative of that Board in the Commons is, I believe, a man of good intentions. He has done that extraordinary thing for a member of the Government, he has actively looked into the matter himself, and has endeavoured at some personal fatigue and peril to himself to be as efficient as possible. All that is to his credit; but, after all, he is not the director of the work of this Board; and, judging entirely by results, I would say that that Board has been a lamentable failure. The Board has not given us what we have a right to demand, that aeroplane fleet which once for all will show a superiority over the Germans, so that no German aeroplane can ever dare to show itself above the horizon. What I say is a possibility. Had the matter been accepted from the very beginning in the spirit in which some of us brought it forward, had true energy been put into the work, had we less of the Gambetta spirit and more of the spirit of Lazare Carnot, the organiser of victory, we should have had to-day, not a Board of high-sounding names and practical incompetence, but an aeroplane fleet. What was the dream of some of us could now be the reality of all. What is wanted is not merely a sufficient number of aeroplanes to tackle the Germans and gain a sort of predominance over them, or to be an aid in scouting or in directing artillery fire, or anything of that sort, but a wider conception of the functions of aeroplanes, which should be also an entirely separate arm. If I were to proceed to figures I would reach a number which would be far beyond anything that has yet been suggested. I would say, that it would have been possible, had this matter been tackled in a right spirit, with adequate intelligence and energy, to have at the present time a fleet of 30,000 aeroplanes. It would not have been used for these sporadic raids, which looked well in the *Daily Mail* and the *Daily Chronicle*, and so on, and which come in so very *a propos* when it is necessary for Ministers to come to this House to ask for £300,000,000; but for raids which would accomplish something definite and decisive towards the rapid winning of the war. With a fleet of that kind it would be possible to have not a mere raid on Comblès or Strasburg or what not, but a continuous raid on points properly selected as part of a great plan which would, one by one, reduce these strong places to impotence so that the plan could be carried out methodically on to the next point. A fleet of that kind would be an aid to the Army in its attacks, and would finally attack the great German Army even in open campaign. It would be the cavalry of the air.

There is a possibility that the war may still last three or four years, and even now that possibility should be faced and this fleet be made a reality.

After predicting the course of the war ending with an armistice and leaving the Germans in possession of a considerable part of their conquest, and in a position to prepare for the future, Mr. Lynch said it would leave the great problem unsolved, and for other generations a still more terrible war than this one, which has been so unexampled in the history of the world. "I will not further elaborate the matter, but I will sit down after concentrating on that one point, the one great line of safety and power which can change the aspect of the war and give hope of a victory on the Western Front: that victory can only be obtained now by one means—that is, by realising the conception, bolder, as I have said, than anything yet contemplated, of a great and overwhelming aeroplane fleet, which will leave this country and the Allies undisputed masters of the air."

Mr. Billing, in the course of a speech, said The Press of this country seems to devote itself every day to new theories of

why Germany must lose, because she has done something. I very rarely read that we must win because we have done something. The Tank itself was advocated when I happened to be at the Admiralty. I think I was one at the Admiralty who was interested in the new Tank propaganda. That was in December, 1914. When at the outbreak of war one of the men who to a very great extent brought the idea came over from America—an Englishman—he was turned aside, and no heed was taken of some of his best ideas. I threw out the simple suggestion in the early days that if we were going to employ these Tanks surely we should employ them with electric cables, so that when they broke down or got beyond the enemy's trenches they could be hauled back out of trouble, instead of being left with all their secrets in the enemy's hands. These Tanks which are so secret that we must not publish a photograph of them, or know whether they are made out of steel or of sugar candy, that we must not be told anything about them—I suggest that the Germans have already captured several of them. I ask the Secretary of State to contradict that, because I have heard it stated that we have lost some of these Tanks. If they are in the hands of the Germans, what is the use of keeping up this secrecy, this absolute official bunkum, which is exhausting the patience of the country?

This Cuffley airship business is another instance. Everybody who knows anything about airships is laughing over the stupendous and crass bluff that we are trying to make over that. We all know that that was not a Zeppelin. We all know that it was an old-fashioned army airship belonging to the Huns, and that this was the first and last time that they had the audacity to send one of that type over here. There we give the lie to the public, an official lie, and say we have brought down a Zeppelin. Even if it were true it would be fatuous enough. When we do bring down a Zeppelin there is no reason to make all this song about it. The fact that Zeppelins can get back after they have raided this country, after two and a-half years of war, the fact that one only is brought down out of ten, is a far greater disgrace to us than the fact that we have brought one down is a credit to us.

I want to tell the hon. member before I sit down that he has the material—I do not say he has an army—"the cavalry of the air" to which the hon. member on my right referred. There is no excuse at all in my opinion why we should not have a fleet.

There is no reason why naval aeroplanes to-day should not undertake the defence of the country without interfering with the little part they are playing in the war. There are the men and the machines, and everything else. You could then leave the Royal Flying Squadrons to get on with the war in France. Perhaps the hon. gentleman will tell us just exactly where the influence of the Air Board starts and where it finishes: where comes in its advisory capacity, and whether it is allowed to dictate. If the Air Board is purely in existence in an advisory capacity, you can take it from me that its advice is not worth anything. If it can dictate there is so much good work to be done. What I should like to say by way of suggestion to the Air Board is to discover to what extent they can dictate. I am afraid it is purely there as a name and not as a real thing. Under these circumstances I appeal to His Majesty's Government to put the control of the future Air Service in the hands of young men of imagination, and let them not only win their spurs but let them win for the country, through the squadrons of the air, in perhaps the year or two of war which we will yet have to face, what no other weapon that has ever been put into our hands can accomplish.

Major Baird (representing the Air Board): I do not believe that the House will wish to be detained very long on the subject of the air. Deeds count more than words in matters of war, and I do not think anybody who has followed the deeds of our airmen either at home or at the Front will have cause to complain in the manner in which the hon. gentleman who has just spoken has complained. The hon. gentleman who first raised the question advocated the creation of a vast fleet of aircraft. I can assure him that I entirely agree with him in that. I do not believe we could have too many aircraft. At least it is impossible to conceive conditions which would enable us to obtain more than we could use with very great success. But I must ask him to believe that both the Naval Service and the Royal Flying Corps are doing their

very utmost to obtain aircraft, and that when he considers the small beginnings with which we started the war, the fact that the expansion of the Air Service has been able to keep pace with the astounding expansion of the Army, and at the same time to win and retain the supremacy of the air, which is undeniable, at the Front, disposes, I think, of the suggestion that there has been a slackness in the matter of developing the construction of aeroplanes. Doubtless the hon. member is aware of the enormous wastage which occurs in the conditions of active service. It is something appalling, and to make good that wastage, to keep up-to-date in the matter of new inventions and improvements, to supply the great expansion which is required—all that has entailed an immense amount of forethought and hard labour on the part of the officers who, long before the Air Board had anything to do with the business, had been in charge of the thing. I think their achievement reflects very, very great credit upon them, and the hon. member perhaps forgot that when he delivered strictures which we in this House are quite ready to accept, but which I do not think he applied to the officers, who cannot answer for themselves, and whose work has been too splendid for words.

I think it is necessary to remember also that aeroplanes and aircraft of all kinds are, perhaps, one of the most complicated and one of the most difficult forms of munitions of war to produce, and that to keep up quantities and numbers, and at the same time to produce the new types which are necessary in order to retain the mastery of the air, is a colossal work. I do not think the experts of our Air Service deserve blame. Indeed, they deserve very great praise for the manner in which they have carried out this work.

With regard to the hon. member for Hertford (Mr. Billing), I really wonder if there is anything to please him at all. Apparently there is nothing with which he is satisfied. Really, I cannot understand his frame of mind. With regard to his statement that there was no excuse for Zeppelins getting back to their country, does he honestly think that that is the proper way to describe or to refer to the deeds of those gallant airmen who go up night after night to destroy Zeppelins? How many has he destroyed himself?

Mr. Billing: Is that a question to ask? I consider it perfectly extraordinary, under all the circumstances of the material assistance given, that they have done such astounding deeds of heroism and efficiency.

Major Baird: I am very glad to have that admission from the hon. member, because what has been done, without in the slightest degree weakening our position at the Front, does seem to me to be deserving of a rather different statement from that to which we have listened to-night. The hon. member talks of handing over the air defence of the country to the naval airmen. Why the very name "Naval Air Service" shows that it exists for naval purposes.

Mr. Billing: For the defence of the country, like the Navy; for protection from invasion.

Major Baird: The Navy does not defend the country on land, but on the sea, and it is to assist the Navy in protecting the country on the sea that the Naval Air Service is detailed, and it seems a very logical attitude to adopt. At any rate, it was the attitude adopted some time ago. It is true the Naval Air Service at the beginning did undertake the air defence of the country, but that was because the whole of the resources of the Royal Flying Corps were required to fulfil the duties of the Army in the field. Now that the position has altered, the Royal Flying Corps has been able to take over and carry out, as I think most people who consider the matter will admit with extraordinary gallantry and efficiency, the very difficult and dangerous duties of safeguarding this country against Zeppelins. I do not contend, and it would be ridiculous to do so, that it is only the Flying Corps upon whom we have to rely for defence against Zeppelins. Anti-aircraft guns, searchlights, and aeroplanes are all combined in a carefully thought out plan, and that plan, as I said before the Recess, is by no means complete. It is improving every day, and if we adopted the attitude that that plan should be completed at a rate which would make it indispensable to deprive our forces at the Front of the support they require, both in anti-aircraft guns and aeroplanes, I do not think that is the view which would commend itself to any but a very small minority of people in the country.

Mr. Billing: I suggest you should take up your Army aeroplanes for employment in France and employ naval

aeroplanes, which are doing nothing in England, for the defence of the country.

Major Baird: It is very easy for somebody who has no inside knowledge of the organisation of the Army Service to suggest that the whole thing could be upset and altered, but I think the House would believe that these matters are carefully considered by those who are responsible, and they are at least as anxious as the hon. member for East Herts that the defences of the country should be efficient, and if those defences were really as simple as the hon. member suggests we should be given credit for carrying them out.

Mr. Anderson: I do not propose to pursue the controversy to which we have just listened, but I am bound to say that I think a part of the speech of the hon. member for East Herts sounded to me very extraordinary, and the hon. member seems to regard it almost in the light of a personal grievance that a Zeppelin should be brought down.

The Cuffley Raider.

MR. BILLING, in the House of Commons on October 17th, asked whether the Secretary for War was prepared to make a statement as to the type of airship brought down at Cuffley.

Major Baird (on behalf of the Air Board) said he could only reply in the negative.

Mr. Billing: Is the hon. gentleman prepared to repeat on the floor of this House the official statement that the airship in question was a Zeppelin?

Major Baird: I can add nothing to the answer I have given.

Monetary Rewards to Airmen.

MR. BILLING asked the Secretary for War whether his attention had been called to the monetary rewards now offered by civilians to soldiers or sailors for the fulfilment of their duties; whether he was aware that, on the occasion of the first Zeppelin being brought down by an airman, the First Lord of the Admiralty refused to allow Flight-Sub-Lieut. Warneford to accept the monetary rewards offered; and whether the War Office and the Admiralty viewed the dignity of the Services from a different standpoint?

Mr. Lloyd George said, so far as the question relating to naval officers was concerned, it should be addressed to the First Lord of the Admiralty. The answer to the first part of the question was in the affirmative. As to the last part, a regulation by which the Army Council were empowered to forbid an officer to accept a gift was about to be issued.

Mr. Billing further asked whether, in view of the exceptional individual heroism necessary and peculiar to the duties of an airman on active service, more especially in engaging a Zeppelin in darkness, the right hon. gentleman would advise His Majesty to create a special distinction for airmen.

Mr. Lloyd George replied that the awards open to officers and men of the Army were considered to be adequate for services of any nature.

Tracer Bullets.

COLONEL NORTON GRIFFITHS asked the Secretary for War whether certain of our airmen had been captured with Tracer bullets used for range-finding with machine guns in their possession, and in consequence were awaiting Court-martial and were in imminent danger of being sentenced to death; whether Tracer bullets have been found on Zeppelin raiders captured in this country; and, if so, whether he would see that the same penalties were imposed upon them as were imposed upon our airmen by the enemy.

Mr. Lloyd George: It is probable that some officers or men of the Royal Flying Corps who have been captured have had Tracer bullets used for range-finding in their aeroplanes. Cartridges with explosive bullets were found in one of the German airships which were brought down in this country. The Army Council have no official information as to any Courts-martial of prisoners of the Royal Flying Corps.

Insurance Against Air Raid Damage.

SIR EDWIN CORNWALL asked the Prime Minister whether the Government has reconsidered the question of the losses sustained by private individuals through Zeppelin attacks in this country; and whether the Government is now prepared to accept the principle of national liability?

The Prime Minister: It is not proposed to make any alteration in the system whereby provision for such losses can be made by means of insurance under the Government scheme.

AIRCRAFT WORK AT THE FRONT.

OFFICIAL INFORMATION.

British.

General Headquarters (France), October 10th, 9 p.m.

"An enemy aeroplane was brought down north of Neuville St. Vaast. Yesterday our own aircraft were again very active. One of our machines is missing."

General Headquarters, October 11th, 10.25 p.m.

"Air guns also dealt effectively with bodies of hostile infantry assembling in the rear of the enemy lines."

"Yesterday our aeroplanes destroyed by bombing two enemy battery positions and damaged many others. They penetrated well behind the enemy front and bombed railway stations, trains, and billets with good effect."

"There was much fighting in the air, and in one case two of our machines engaged seven hostile aeroplanes and drove down or dispersed them all. One of these enemy machines was seen to be destroyed and two others severely damaged. Four of our own machines are missing."

General Headquarters, October 12th, 10.22 p.m.

"Though the weather was unfavourable for aircraft, there has been much bombing activity during the past two days by our aeroplanes against the enemy's lines of communications, aerodromes, and infantry on the march. One of our machines has not returned."

War Office, October 13th.

"*Mesopotamia. Tigris Line.*—On the 10th inst. our aeroplanes bombed a hostile camp at Gussabs Fort (11 miles S.E. of the Dujailah Redoubt) with good effect. On the following morning it was observed that the camp had disappeared."

Admiralty, October 14th.

"A successful raid was carried out on Oberndorf on the afternoon of October 12th by a large number of French and English naval aeroplanes. Three English machines failed to return."

General Headquarters, October 16th, 9.59 p.m.

"Much successful work was carried out by our aeroplanes yesterday in conjunction with our artillery. One hostile battery position was completely destroyed and many others severely damaged. Bombs were dropped on an enemy railway station and upon transports moving behind the enemy's lines with excellent effect."

War Office, October 16th.

"*Salonica.*—A successful bombing attack on Buk Bridge was carried out by the Royal Naval Air Service."

French.

Paris, October 10th.

"Our aeroplanes have shown themselves particularly active in the region of Remiremont and the Somme. They fought six air fights, bombed the Saint Pierre Vaast Wood, and effected numerous reconnaissances."

"During the night of October 9th-10th Adjutant Pilot Baron and Adjutant Chazard bombed at Stuttgart the Bosch magneto factory. Dense smoke was seen rising from this factory as the result of the bombardment."

"*Balkans.*—Monastir and Prilep were bombed by our aeroplanes."

Paris, October 11th.

"Yesterday bombs were dropped by enemy aeroplanes on Gerardmer and Belfort. The damage was insignificant. Five shells were dropped without any effect in the direction of that town by the enemy's long-range artillery."

"In the course of yesterday, besides numerous surveillance, reconnaissance, and range-regulating flights, our aeroplanes fought 15 engagements in the Verdun region, 14 south of the Somme, and 44 north of that river. In the course of the latter engagements four enemy machines were brought down, one by Adjutant Dorme, who thus reached his thirteenth machines brought down. Six other enemy machines were seriously hit and fell into the German lines."

"Bivouacs and cantonments in the vicinity of Peronne, and the Tergnier aviation sheds, the railway stations of Saint Quentin and Guiscard, and the wood of Porquericourt were severely bombed. A train running between Annois and Ham was attacked both with bombs and machine guns. During the night of the 10th-11th the Lorrach establishment (Grand Duchy of Baden), the Colmar aviation ground, and Mulheim railway station were bombed."

Paris, October 12th.

"One of our air squadrons last night bombed the railway station of Vigneulles, with results that were observable."

"*Balkans.*—Our aeroplanes bombed Prilep and Philipopolis."

Paris, October 13th.

"A Franco-British squadron of 40 aeroplanes bombed the Mauser works at Oberndorf (on the Neckar); 4,340 kilogrammes (over 4 tons) weight of projectiles were dropped, and their attainment of the objectives aimed at was noted. Six German aeroplanes were brought down in the course of fights into which they entered to defend their factories."

Paris, October 14th.

"Our aeroplanes bombed Vouziers and Ardeuil. Fog and clouds hampered air operations along the whole of the front."

Paris, October 15th.

"In spite of the clouds 300 metres from the ground and a veritable and continuous barrage of fire between 200 and 300 metres, our aeroplanes co-operated in the most effective manner in the fighting yesterday south of the Somme. They surpassed all that could be expected of them. One of our machines returned riddled with over 200 bullets. North of the Somme two pilots attacked the enemy with machine-guns at short range in his trenches, flying very low. In the course of the recent bombardment of the Mauser works at Oberndorf, Adjutant Lufbery, of the American Squadron, brought down his fifth enemy machine."

Paris, October 16th.

"In spite of the bad weather, our aeroplanes fought seven engagements, in the course of which one enemy machine was brought down."

"In the sector of Lassigny a German aeroplane which was hit by our artillery fell in flames in its own lines."

Russian.

Petrograd, October 13th.

"In the region of Seletin (on the River Suchava), in the Wooded Carpathians, an enemy aeroplane was brought down by our rifle-fire. The machine caught fire as the result of the fall. The aviator and observer, who were alive, were taken prisoner."

Petrograd, October 16th.

"On Saturday, in the region of Prudy Railway Station, a German aeroplane, which was hit by our machine-gun fire, descended. The aviators were taken prisoners."

Italian.

Rome, October 10th.

"Last night hostile aeroplanes made another raid on the Lower Isonzo, dropping a large number of bombs on villages in the Grado Lagoon and elsewhere; three people were killed, a few others wounded, and some damage done. One of our aeroplane squadrons dropped bombs on the enemy positions on Col Santo, north of Mount Pasubio. Our aviators drove off numerous aerial attacks and returned safely. On the night of Oct. 8th an enemy aeroplane flew over Valona dropping bombs, without, however, causing any damage."

Rome, October 12th.

"Hostile aircraft dropped bombs yesterday on the Asiago plateau without doing any damage."

"One of our squadrons again bombed the enemy's positions on Col Santo (Adige Valley), returning safely to our lines."

Rome, October 13th.

"Enemy aircraft bombed the Grado Lagoon and other points on the Lower Isonzo; there were a few casualties, and trifling damage was done. In an air fight above Gorizia a hostile aeroplane was driven down and fell near San Marco."

Rome, October 14th.

"Our aeroplanes dropped bombs on enemy hutments in the Sugana Valley and returned safely. In the evening enemy aircraft made the usual raid on the Lower Isonzo without doing and damage."

Roumanian.

Bucharest, October 11th.

"During aerial attacks by enemy airmen bombs were dropped on Constanza and on the towns on the banks of the Danube."

Bucharest, October 12th.

"An enemy air squadron dropped bombs on Constanza, also poisoned sweets and garlic infected with cholera bacilli."

German.

Berlin, October 11th.

"Our aviators brought down four aeroplanes behind the enemy lines, and four behind our own."

"Balkans.—Our aeroplane squadrons successfully bombarded troop transports near Constanza."

Berlin, October 14th.

"The raid by an enemy air squadron on Southern Germany, mentioned in to-day's *communiqué*, occurred, according to supplementary official reports, as follows: Yesterday (Thursday), between 3 and 5 in the afternoon, several enemy air squadrons, totalling from 40 to 50 machines, flew over our South German home region. Bombs were showered on Donaueschingen, Alleneshofen, Hüfingen, Eschweiler, near Neustadt, Hatsich, in the Kinzig valley, and Rottweil. They did no military damage. They damaged private property to a small extent and slightly wounded some civilians. At Tübingen a bomb fell on a reserve hospital, killing two children in a neighbouring garden. In itself and at Oberndorf seven persons were killed and a number wounded, the total casualties being 27. Of the attacking aeroplanes nine were brought down by our airmen and anti-aircraft guns, including one British aeroplane. The enemy in this fresh attack on peaceful German places had to pay for his results, which were without military importance, by suffering heavy losses himself."

Austrian.

Vienna, October 11th.

"In the evening of the 10th inst., one of our aeroplane squadrons successfully bombarded the military object of Monfalcone and Staranzano. In the night of the 10th-11th inst. a hydroplane squadron attacked the harbour establishments, the airsheds, and the batteries of Vlora as well as the enemy ships lying there, with the best results. Big fires in the town, which remained visible for a long time, and the burning of an oil tank were observed. All our machines returned undamaged."

Bulgarian.

Sofia, October 4th.

"Our seaplanes attacked with great success an enemy seaplane shed on Tachawlu Lake, north of Constantza."

Sofia, October 6th.

"On the Black Sea coast our seaplanes attacked an enemy war vessel off Mangalia, and forced it by dropping bombs to beat a hasty retreat."

Sofia, October 13th.

"On the Black Sea coast a seaplane squadron attacked the port of Constantza on Tuesday last, causing great fires in the harbour and in the oil tanks."

Personals

Casualties.

Captain RALPH NEWTON ADAMS, M.C., Royal Fusiliers and R.F.C., reported killed, was the only son of Mr. and Mrs. H. N. Adams, of 8, Stanley Crescent, W. Born in 1895, he was educated at St. Andrew's, Eastbourne, and Charterhouse. In May, 1914, he was gazetted to the 7th Royal Fusiliers and proceeded to the Front, attached to the 4th Battalion in December, 1914. He was invalided home in February, 1915, and in August, 1915, was gazetted to the R.F.C. He returned to the Front in March last, and was awarded the Military Cross and made Flight-Commander in July. He was killed on October 10th.

Second Lieutenant JOHN SINCLAIR MORISON, R.F.C., killed whilst flying on October 13th, was the eldest son of Mr. and Mrs. John Morison, Talbot Road, Highgate, and a nephew of Sir Maitland Park, editor of the *Cape Times*. He was born at Woodford Green, Essex, in November, 1896, and was educated at Christ's College, Finchley, whence he matriculated in 1913. He enlisted at the outbreak of the war, and in July, 1915, transferred to the Inns of Court O.T.C. In June, 1916, he volunteered for service in the R.F.C. Whilst flying on October 13th his machine nose-dived, and he was killed instantaneously. His younger brother is in the Service.

Lieutenant ALFRED HENRY TEMPLEMAN LORRAINE SPEER, R.F.A., attached R.F.C., previously reported missing, now known to have been killed on July 9th last, aged 22 years, was the elder son of Dr. and Mrs. Speer, of The Priory, Great Malvern, and Powyscote, Balcombe, Sussex. He was educated at Malvern College, where he was in the O.T.C., afterwards proceeding to Trinity College, Cambridge. On the outbreak of war he joined the Public Schools Brigade, and later obtained a commission in the R.F.A., in which he subsequently received promotion. In 1915 he trained for the R.F.C., becoming attached in January of this year. He was on active service from March until July 9th, when he met his death in combat in the air over the enemy lines, his machine being shot down, and he and his observer killed.

Second Lieutenant J. S. MITCHELL, R.F.C., aged 20, who has died on active service, was the only son of Colonel and Mrs. T. W. H. Mitchell, of Sandgate, Wath-on-Deane. He was educated at Rugby, and was intending to take up the profession of a mining engineer. After leaving school in July, 1914, he went for a tour in Australia and Canada, returning in July, 1915. Then he commenced to work on munitions at Sheffield, and continued to do so until he was gazetted to the R.F.C. on June 3rd, 1916.

Missing.

Lieutenant W. DOUGLAS MILLER, R.F.C., elder son of the Rev. Hugh Miller, Shandon, Dumbartonshire, is officially reported missing from October 2nd. Lieutenant Miller, who is 23 years of age, went to the Front some weeks ago.

Lieutenant LIONEL PINKERTON, R.F.C., previously officially reported missing, is, it has now been ascertained, a prisoner of war in Germany. He is a nephew of Mr. Wm. Pinkerton, Dunaverney, Ballymoney, and has a brother, Norman, serving with the Australians.

Second Lieutenant HENRY A. TAYLOR, M.C., Royal West Kent Regiment and R.F.C., elder son of Mr. and Mrs. F. H. Taylor, formerly of Lovelace Gardens, Surbiton, is reported missing. Lieutenant Taylor was in August awarded the Military Cross for bombing a train from a height of 450 ft., derailing several trucks, under heavy fire from enemy machine guns. He is 18 years of age.

Married and to be Married.

The marriage of Major SANDFORD WYNNE EYTON, R.F.C., and Miss FRANCES CARBUTT, will take place on Tuesday, October 24th, at 2.30, at St. John's, Southwick Crescent.

The marriage arranged between Mr. SYDNEY PICKLES, son of Mr. M. P. Pickles, of Australia, and Miss A. R. E. MARKS, daughter of Mr. Ritchie Marks, of Hampstead, N.W., is to take place on November 3rd next. It is to be an extremely quiet ceremony, and no invitations are being sent out.

A marriage has been arranged, and will take place in December, between Lieutenant ROBERT PEEL ROSS, R.N., Squadron Commander, R.N.A.S., only son of the Rev. R. Peel Ross and Mrs. Ross, of Druim, Inverness, and grandson of the late Captain Horatio Ross, of Rossie Castle, Montrose, and MURIEL, youngest daughter of Mr. E. H. KINNARD and Mrs. KINNARD, of Clevelands, Westgate-on-Sea, Kent.

Items.

Second Lieutenant JOHN HAMPSON DODGSHON, Surrey Yeomanry and R.F.C., of whom a biographical notice has appeared, was the son of Mrs. Herbert Hooper, of Wandsworth Common, S.W.

The will of Second Lieutenant WILLIAM JAMIESON MCCONNOCHIE, R.F.C., killed in France November 8th, has been proved at £1,722.

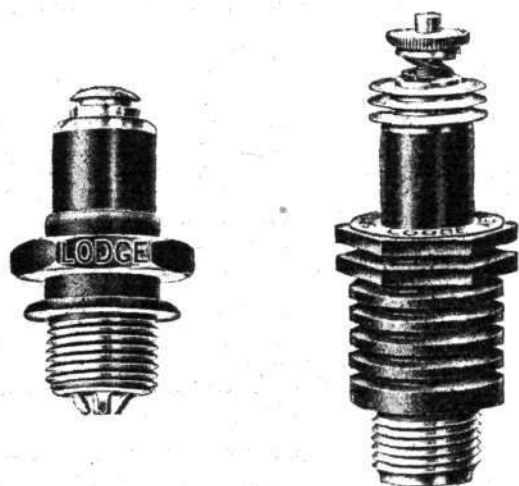
LIEUT. WULSTAN JOSEPH TEMPEST, R.F.C., who has been appointed Companion to the D.S.O., is 25 years old. He is one of the younger sons of Mr. Wilfrid F. Tempest, of Ackworth, Grange, Pontefract, Chairman of the West Riding Bench for the Pontefract Division. He was educated at Stonyhurst, where he won distinction in mathematics, and then spent three years on the training ship "Worcester." From that he took up mining engineering, subsequently spending two or three months sugar farming in South Africa. With his brother, Edmund, who is also in the R.F.C., he then went to Canada farming for three years, and came home in October, 1914. Securing a commission in the K.O.Y.L.I., he went to France in May, 1915. He was invalided home, and after serving in a garrison battalion was transferred to the R.F.C., obtaining his "wings" in June last.

SIDE-WINDS.

Up to but a short while back the use of aluminium and its alloys in connection with aircraft was, considering its apparent possibilities, somewhat limited, owing partially to prejudice against its use based on certain unfavourable characteristics of pure aluminium itself, and partially due to the fact that there were few aluminium alloys that did not present defects in one way or another. Now, however, aluminium is finding more favour with designers, and there are at present on the market several aluminium alloys that have given excellent results under varying conditions. One such alloy is "Miralite," the manufacturers of which have had nine years' experience in handling all kinds of work in aluminium and its alloys. "Miralite" is produced in 30 different grades, all of the same composition, to meet various requirements. We are informed that a tensile strength of 17 tons is obtainable with "Miralite," whilst its electrical conductivity is 59. After exhaustive comparative tests with various aluminium alloys, one of our foremost aero engine constructors finally adopted "Miralite" for the pistons with most satisfactory results in practice. The Miralite Co. make a speciality of die-cast and sheet work, and among the advantages claimed for this metal are its durability and immunity from the harmful action upon it by the atmosphere, salt water, &c. As an example of this claim it may be mentioned that a L. and S.W. Railway coach equipped throughout with "Miralite" fittings has been in use for the last six years, and the fittings are as good as new, whilst a proof that sea water has no harmful effect on it was demonstrated by towing a piece of this metal behind a boat from New Zealand to England without any sign of action resulting. The Miralite Co., of High Street, Mortlake, London, S.W., will be pleased to place their experience at the disposal of any firm contemplating the adoption of their alloy.

PROPELLER makers especially will be interested to hear that Messrs. C. Noel Legh and Co., who are paying particular attention to the needs of the aircraft industry as regards timber, are now handling a very fine parcel of 1-inch prime Honduras mahogany boards eminently suitable for propellers.

Two new patterns of the well-known Lodge sparking plug for aero engines are being introduced by the Lodge Sparking



Plug Co., Ltd., of Rugby. Illustrations of both are annexed—the one on the left being model "R" for rotary engines, which is priced at 10s. 6d.; while the other, on the right, is for engines with stationary cylinders and is known as the "KS"; it sells at 11s. 6d. At the same time it should be noted that the popular Lodge model "A" plug is now listed at 12s. 6d.

In connection with the fund for the benefit of M. Osipenko, who was able to pay a visit on crutches to Hendon the other day, a concert is being held at the Holborn Restaurant on Saturday, October 21st, at 9.30 p.m. Several well-known music-hall artistes have promised to appear, including Carr Lynn, Lupino Lane, Harry Weldon, Kisbey, &c. Tickets are 2s. 6d. and 5s. each, and can be obtained at the door or from Mrs. Savery at the Hendon Aerodrome Café, or at the Grahame-White Co.'s offices.

MR. VIRGILIO, formerly instructor at the Beatty School of Flying at Hendon, has, we understand, joined the Wells Aviation Co. of Chelsea. He will probably be chiefly engaged down Chichester way at the new place being started down there by the firm.

THE Barnwell Brothers apparently continue their friendly competition in the way of startling designs. F. S. holds, we believe, the honours for the moment, with a new surprise packet built by the Bristol firm. No details, of course, at present, but it is "some" 'bus. One may be sure that Harold has still another up his sleeve, and as it is his turn next, we may look for progress and still more progress.

ANOTHER stunner, this time hailing from away up North, is promising well. It is, as far as we know, the first machine of the type to be built in this country, so that more than ordinary interest attaches to its performance.

MR. W. CHAS. HOLT is the moving spirit, general manager and secretary of the Canute Airplane Co., a company which is taking over the works of Moonbeams, Ltd., at Royal Pier Gates, Southampton. Under the guidance of Mr. Holt, who has been actively identified with aviation for a number of years, the company is to build seaplanes and land machines as well as fittings and aero engine parts.

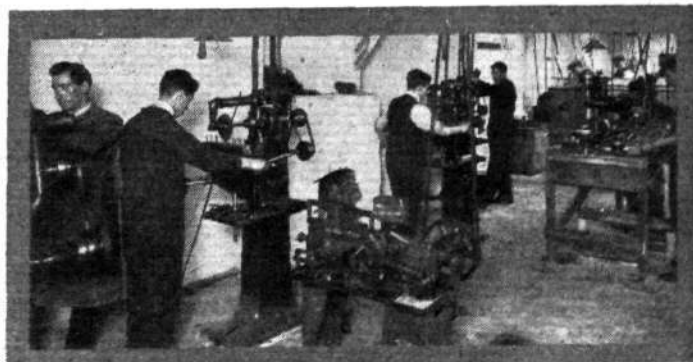
A.S.C. Expansion.

EVER since their inception just a year ago the Aircraft Supplies Co., of John Street, Theobald's Road, London, W.C., have made "exceeding good" in their by no means easy task of supplying the industry with fittings, more fittings, and still more fittings. The result is that the inevitable has happened—from factors they have now become manufacturers themselves. With the aid of a factory conveniently situated at the back of the firm's offices in John Street, standard fittings and those to special specifications will be turned out so as to meet requirements under much more favourable and speedier conditions than hitherto. A number of shops fitted with up-to-date machinery are already in operation, whilst there are ample facilities for further expansion as requirements demand.

Among the machine tools already at work are a No. 4 Herbert capstan lathe turning out duralumin pulleys; a number of $\frac{3}{4}$ -in. capstan lathes making special eyebolts (AGS. 122) and shackle-pins; eight large and small milling machines machining wing tip skid sockets (No. 5790, Parts 3 and 4), shackles, elevator levers (Drawing 9807, Part 1), and other drop forgings; a Chicago automatic turning out 100-ton pins (AGS. 137), and No. 2 Foster capstans making duralumin washers (AGS. 157) and special hinge bolts. The tool room is well equipped and able to cope with the making of any tools required for the various machines.

The works naturally contains an adequate number of single and double-spindle drilling machines, screw-cutting lathes and similar auxiliary plant. The power is derived from 3 x 20 h.p. electric motors.

Portions of the shops are reserved for additional machinery which is expected to be installed within the next few weeks, and these include several automatics, screw-cutting and



A portion of the main machine shop in the Aircraft Supplies Co.'s new works, showing lathes working on eyebolts and shackle-pins, and also some milling machines operating on elevator levers, shackles, &c.

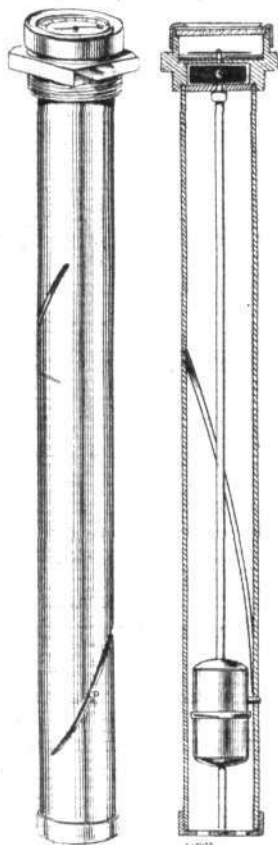
capstan lathes, including an additional No. 4 Herbert. A new shop is being provided for fitters and welders, and for the installation of a plant for suaging rods and drawing stream-line wires, and for the accommodation of a number of power presses. A shop for the manufacture of wood parts will also be added in the near future.

We have already drawn attention to the illustrated list issued by the A.S.C. every fortnight, but mention may be made of another feature the company proposes to introduce, which should be of great assistance to constructors. It is proposed to issue a booklet containing reproductions of all the more important AGS. blue print specifications, supplemented by photographs of the various parts.

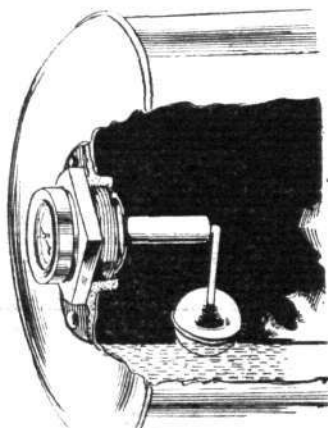
Mr. George H. Mansfield is certainly to be congratulated on the progress of the A.S.C., and with such confrères as Mr. Bernard Isaac as co-director, and Mr. G. W. Smith as works' manager, still further success may be anticipated.

The Simms Petrol Gauges.

ONE thing which worries the pilot not a little is as to how much petrol remains in the tank. Many devices have been invented and put on the market, but generally speaking they have been either too complicated or they have failed on the score of reliability. An exception, however, is the Simms petrol gauge, which is finding increasing favour and is becoming almost a standard fitting in some directions. The Simms gauge, which is sold by The Simms Motor Units, Ltd., 191, Wardour Street, is made in two patterns, but the principle is essentially the same in each case. In the original vertical form there is a float which can rise and fall on a gunmetal ribbon, but as it goes up or down a pin on the side travels through a cut in the casing and so twists the ribbon. At the top of the ribbon is a small bar magnet which controls the pointer on the other side of the dial and so indicates the amount of petrol in the tank. In the other pattern, which is mostly favoured for aircraft work, and is fitted either at the side or end of the tank, the float is fixed at the end of a wire, which is bent at an angle, and as it travels up and down it moves the magnet which controls the pointer as in the other case.

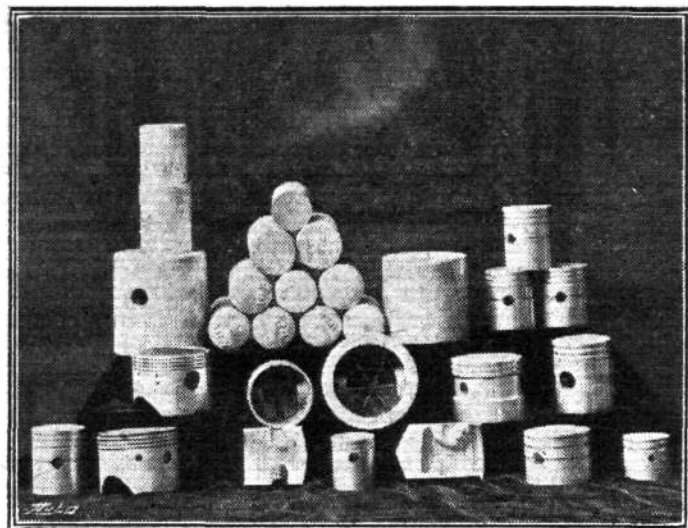


The Simms Petrol Gauge.—Vertical type, with the dial at top of tank. In the sectional view the float is seen on the gunmetal ribbon which moves the bar magnet at the top.



The Simms Petrol Gauge.—The horizontal model for fitting at side or end of tank.

One important feature common to both types is that there is no place for petrol to leak through so that the gauge is fume-, dust-, moisture- and air-tight. The fitting of the gauge is a simple matter; a flange bushing is soldered directly on to the tank and the gauge is screwed in, making a perfect joint, while, should it be necessary at any time to remove the gauge, a screw cap, which can be supplied, is inserted in its place.



AEROLITE PISTONS.—A batch of pistons of various sizes, in the rough and finished, made by the Aerolite Piston Co., Ltd., of Hanover Court Garage, Hanover Street, London, W., of their special aluminium alloy.

FROM THE BRITISH FLYING GROUNDS. Grahame-White School, Hendon.

LANDING practice last week with Instructor: Messrs. Kaizer, Payne, Steeves, Green, Woods, Robertson, Travers, and Sutherland. Straights with Instructor: Messrs. Randon, Hitchcock, Norris, and Whiteman.

Instructors: Messrs Manton, Winter, Pashley, Biard, and Hale.

PUBLICATIONS RECEIVED.

Eclipse or Empire? By H. B. Gray and Samuel Turner. London: Nisbet and Co., Ltd., 22, Berners Street, W. Price 2s. net.

"Hunlike." By W. Heath Robinson. London: Duckworth and Co., 3, Henrietta Street, W.C.

Some "Frightful" War Pictures. By W. Heath Robinson. London: Duckworth and Co., 3, Henrietta Street, W.C. Price 1s. net.

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AERO-MECHANICAL CO., LTD.—Capital £3,000, in £1. shares (1,000 7½ per cent. cumulative preference). Acquiring business of Edgar Salomon and Jacques Fogelson, carried on at 63-66, Rochester Row, Westminster, as the Aero-Mechanical Co., importers, exporters and repairers of and dealers in aeroplanes of all kinds. First directors: B. Bonas and A. Bonas.

AIRCRAFT ENGINE CO., LTD., 81, Cannon Street, E.C.—Capital £100, in 1s. shares. Acquiring business of engineers and manufacturers of engines, being a portion of the business carried on by A. Richmond and T. T. Rankin, C.E., B.Sc., M.I.M.M. and M.I.M.E., at 81, Cannon Street, E.C. First directors: A. Richmond and T. T. Rankin.

NAVARRO AIRCRAFT CO., LTD., 10, Essex Street, Strand, W.C.—Capital £2,000, in £1 shares.

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